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ABSTRACT

California's population will increase more rapidly than the United States population as a whole, as immigration plays a larger role in population growth and California accepts over one-third of all immigrants to the U.S. The state's population will also change as it is becoming older and more ethnically diverse. As this report shows, these changes are challenging California's school system, which accounts for nearly 55 percent of the state's budget expenditures. The school-age population between 3 and 24 enrolled in school should increase almost 50 percent between 1980 and 2030. By 1990, Anglos will no longer comprise a majority of this population; by 2015 there will be more Hispanic than Anglo students and more Asian than black students. California schools must cope with growth and ethnic diversity by creating better dropout prevention programs, improving Hispanic and black students' academic achievement, training a sufficient corps of effective teachers, and determining the schools' proper roles in enculturating immigrants and their descendants. It is unclear whether California will continue to increase educational funding or concentrate on divisive debates over bilingual education and other issues as the state's population changes. Schools will play an even more important role in California's future economy, because a service economy requires "knowledge" workers. If schools continue to lose 20 to 30 percent of their students as dropouts, they impose remedial training costs on business and society. Chapters are accompanied by numerous tables and references. An appendix presents demographic assumptions. (MLH)

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Population Change

and

California's Education System

by Leon F. Bouvier and Philip L. Martin

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Population Change and California's Education System is published by the Population Reference Bureau, Inc. It is devoted to a discussion of demographic issues of concern to the State of California.

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Summary

California's population is growing and changing. The population of the state will increase more rapidly than the United States population as a whole as immigration plays a larger role in population growth and California accepts over one-third of all immigrants to the U.S. California's population will also change as it is becoming older and more ethnically diverse.

These population changes are creating new challenges for California's school system. Public education accounts for some 55 percent of California's budget expenditures, with elementary and secondary schools absorbing over 40 percent of the state budget to train tomorrow's workers. Schools must teach the reasoning and communication skills needed by the service economy of the future to enable California to maintain its competitive position and standard of living.

This report outlines the implications for California's educational system of these population changes. The school-age population between 3 and 24 will increase and change in ethnic composition. The number of Californians age 3 to 24 enrolled in school should increase almost 50 percent between 1980 and 2030. By 1990 Anglos will no longer comprise a majority of the school-age population; by 2015, there will be more Hispanic* pupils than Anglo students and more Asian than Black students.

California's schools face the challenge of coping with growth and ethnic diversity in the future student population, including programs to reduce the high school dropout rate, especially for Hispanics; better ways to improve the academic achievements of Hispanic and Black students in order to maintain and improve the quality of the California work force; the need to train a sufficient corps of effective teachers; and determining the proper roles of the schools in acculturating immigrants and their descendants. Meeting these goals is costly; after committing an additional $1 billion to education in the reform movement of 1983, it is not clear whether California will continue to increase educational funding or concentrate on divisive debates over bilingual education and other issues that arise as California's population changes.

Schools will play an even more important role in the health of the California economy of the future because a service economy requires "knowledge" workers. The ticket to economic success in the 1950s' industrial economy was often a union card; the 1990s' ticket will be an

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**The term "ethnic" as used in this report encompasses some distinctions that are often considered racial. Our convention is followed in part for simplicity, but also because some of the most common current categories have at best ambiguous racial bases. For example, South Asians are generally classified as nonwhite, but many are in fact racially Caucasian. People of mixed Black/White origin are usually classified as Black without regard to whether the greater proportion of their ancestry is in fact White or Black. Hispanics are usually classified as Whites, even though many of them are racially mixed. Finally, Anglo includes many people not of Anglo-Saxon ancestry, including the co-author of this report! For these reasons, in this report, "ethnicity" rather than "race" will be used.*

individual's education. Schools are the bridge linking students to the economy; if schools continue to lose 20 to 30 percent of their students as dropouts, they impose the cost of remedial training on business and society.

California has a history of coping successfully with growth and diversity. California's educational system can again record success as it adapts to a growing and changing student population. However, success is not automatic: this report should help Californians anticipate tomorrow's educational challenges.

"We know what we are, but not what we may be." -- Shakespeare

Chapter 1
Introduction

California is a land of opportunity. In the two generations since World War II, California's population has almost tripled and the state has emerged as the fifth largest economy in the *world.* California has been blessed with imaginative people, a favorable climate, and abundant resources.

If people are California's most important asset, then the state's educational system is the critical bridge which prepares young people for their roles in the state's economy and society. The elected officials of the state and local governments operate the large and complex schooling system and therefore can strongly affect for better or worse the "people" ingredient in the recipe for economic success. California's educational system has been criticized and reformed; expenditures have increased to reduce class size and improve teachers' salaries; and curriculum changes have been implemented to boost achievement. However, most Californians agree that the elementary and secondary schools, which account for 40 percent of the state's expenditures, need further reforms and improvements.

This report explains how population changes will affect California's educational system. It stresses the rapid growth and ethnic diversity of California's population: in the 50 years between 1980 and 2030, the state's population will almost double and Hispanics will outnumber Anglos. Population growth and ethnic changes show up first among the young, and this means that Hispanics will be the dominant ethnic group in California schools soon after the turn of the century. The changing ethnic mix of students presents a special challenge to California schools because it raises language, achievement, and dropout issues.

Schools are the bridge between home and independent participation in the economy and society. Schools will be especially important in California in the coming decades because immigrants and their children will comprise a larger share of students and the schools will also provide the transition to American culture. The United States accepts most of the world's immigrants, and California is their preferred destination.

Immigration and a changing economy impose special responsibilities on the school system. The information economy in the coming decades will demand workers with technical skills who can communicate those skills to others. The dimensions of the challenge for California's schools can be illustrated simply: by 2030, almost half of the Hispanics and three-quarters of the Asians age 3 to 24 will be immigrants or the children of immigrants who arrived after 1980.

The challenges are real, but the problems are not insurmountable. This report projects alternative futures; it does not predict what will actually happen. The purpose of these projections is to alert Californians to the consequences of current trends. For example, if California does not want average achievement scores to fall as the ethnic mix of students changes, it must take steps to improve the performance of the growing number of Hispanic students.

This report explains why the schools will become ever more important in the high-tech economy of the future. The "internationalization" of the economy means that California workers now compete directly with workers in Europe, Asia, and Latin America. Californians must either work harder or work smarter, and the only way for California to avoid competing with workers elsewhere on the basis of wages and sweat is to have a better educated and more productive work force.

Schools train the workers and citizens of the future. While the exact role schools should play to maintain a common culture and history is hotly debated, it is undeniable that schools do indeed shape our perceptions of who we are. California has replaced New York as the place where most immigrants begin their journeys into American society. The challenge for California is to avoid the mistakes of the past as it welcomes newcomers from Latin America and Asia and shapes tomorrow's world.

Demographic and educational changes are among the most serious challenges Californians will face over the next several decades. Demographically, the population is growing and becoming older and ethnically heterogeneous. There is sufficient anxiety over both the quality, as well as quantity, of schooling that "Concern over the quality of education has taken center stage in national and state politics for the past several years."[1] The student population is becoming more ethnically diverse while qualified teachers are in ever shorter supply.

Population Growth and Change

California's history is a story of growth. Economic booms and technologies which improved communications and shortened distances have combined to transform California from a Mexican outpost of perhaps 100,000 people in 1845 to the nation's most populous state with a population of over 27 million in little more than a century[2] (see Table 1). Today the Hispanic population is growing rapidly, numerically and proportionally, and by 2030 Hispanics will no doubt outnumber Anglos, returning the state toward the ethnic population balance that prevailed some two centuries ago.

California has surprised pundits by coping successfully with massive increases in population. British Ambassador Lord James Bryce asked in 1909, when California had 2 million residents, "What will happen when California is filled with 50 millions of people?"[3] In 1966, a

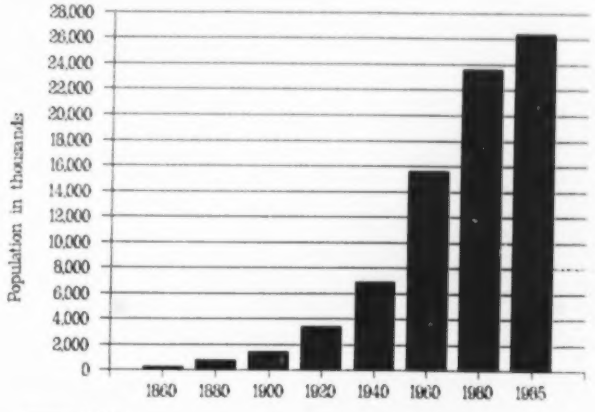
TABLE 1

POPULATION OF CALIFORNIA
1860 TO 1985
(in thousands)

Year	Population	Percent Change
1860	379	----
1870	560	47.4
1880	864	54.3
1890	1,213	40.3
1900	1,485	22.4
1910	2,377	60.1
1920	3,426	44.1
1930	5,677	65.7
1940	6,907	21.7
1950	10,586	53.3
1960	15,720	48.5
1970	19,971	27.1
1980	23,667	18.5
1985	26,403	11.6

Figure 1

Population of California, 1860 to 1985



Source: Table 1

Population Bulletin entitled "California: After 19 Million, What?" noted that "Human ingenuity is on trial in California," as the state absorbed 1,500 newcomers each day.[4] During the 1960s, California coped with rapid population growth by creating a model system of higher education and constructing freeways to move people, and a system of dams and canals to move water.

In the 1970s, many Californians switched from coping with population growth to questioning its virtues. Robert Moretti, then Speaker of the State Legislature, noted in 1971 that California "... can no longer accept the proposition that all growth is good."[5] This slow- or no-growth feeling took root under Governor Edmund "Jerry" Brown and the "small is beautiful" philosophy.

Today, the population debate has shifted to encompass concern for both the size and the composition of the state's population. Some cities and counties try to restrict their growth, but an equal concern in many areas is how to help newcomers become productive members of society.

The growing awareness of the changing composition of the population derives from recent demographic shifts that have seen increases in immigration at the same time that the fertility of Californians has dropped to an historical low. As we approach the 21st century, California has become the new Ellis Island of the nation, welcoming almost 200,000 newcomers from abroad every year.[6]

In many ways demography is destiny, and these demographic shifts are reshaping California's social, economic, and cultural environment. California will add almost seven million residents during the next 15 years, meaning that California will add more people than now live in 11 states. Immigration contributes about half of the state's net population growth; almost 550 immigrants arrive in the state every day. The arrival of young immigrants and the aging of California's resident population highlight the changing nature of two groups which are of special concern to government: the young who must be educated and the elderly who require pension and health care benefits.

The magnetic lure of California for immigrants attracts younger people and families, so population changes are first apparent among children. Between 1980 and 2000 the state will add almost 80,000 school-age children (5-19) every year. In 1980, about 30 percent of these children were Hispanic or Asian. By 2000, almost half of California's school-age children are expected to be Hispanic or Asian. Shortly after the turn of the century, there will be more Hispanics age 5-19 than Anglos of those ages.[7]

Growth and increasing ethnic diversity pose special challenges for California's educational system. Schools begin a child's journey into society, and they are doing a very uneven job training tomorrow's work force. As Michael Kirst has noted: "... steady declines in student academic performance, along with steady increases in high school dropout rates (currently an

alarming 29 percent of high school students leave the system), led to an atmosphere of despair."[8] The state's expensive higher education system is also performing unevenly; the University of California and the California State University systems are recognized leaders in teaching and research, but the community colleges which offer local education options are floundering.

Population changes make the health of the education system vital to California's economy and society. During the 1990s, fewer young workers will enter the labor market, so the state needs well-educated and trained young workers to maintain the productivity growth which increases incomes and taxes. The challenge will be even more critical after the turn of the century. Over 95 percent of the growth in the labor force during the period 2000 to 2030 will be comprised of females and members of minority groups.

Clearly, California must strengthen its schools if it is to remain competitive with other states and nations. However, California may have to strengthen and maintain its schools without large-scale federal assistance because immigration, the major population change affecting the state, is reshaping only a few states. California may not be able to depend on the federal government to provide increased funding to cope with its heterogeneous pupils.

Newcomers and Education

The educational system is a critical tool to assist newcomers to the state. Schools provide the basic skills young people need to become productive workers; they also provide the common history and culture which bind society together. Persons left out of the educational system suffer both economically and socially.

The rapidly growing immigrant population of the state is a tremendous challenge to the educational system as it strives to attain these goals. Between 1967 and 1977, while California public schools were experiencing a 3 percent enrollment decline, the number of students of Hispanic background grew by 45 percent and the number of Asians by 65 percent.[9] Within a decade Anglos will no longer comprise the majority of school-age children, and soon thereafter Hispanics will constitute a majority of the 5-19 age group.

If the past is a harbinger of the future, variations in educational attainment can be expected among the ethnic groups that make up the population of the state. In general, Anglo and Asian adults have considerably more years of schooling than their Black and Hispanic counterparts. According to the 1980 U.S. Census of Population, about 76.6 percent of Anglos age 25 and older had completed high school, and 20.8 percent had completed at least four years of college. Asian attainment was even greater: 76.3 percent and 31.1 percent respectively. Only 43.6 percent of adult Hispanics had a high school education, and a mere 6.4 percent had graduated from college. Black graduation rates were 68.5 and 11.3 percent respectively

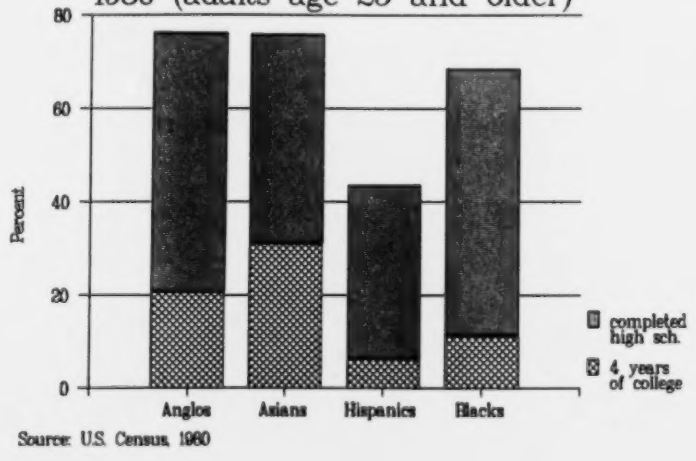
(see Figure 2).

The educational attainment of Mexicans is particularly low in areas where they are concentrated, such as Los Angeles. Two-thirds of the Mexican adults over age 25 in Los Angeles had no more than a primary school education and just over 1 percent had four or more years of college. Of the total adult population of Los Angeles County, over 17 percent ended their education after the eighth grade and only 18 percent had completed at least four years of college.[10]

The educational achievements of Asians, on the other hand, have been remarkable. Looking solely at the male population (20-64) of the Los Angeles metropolitan area in 1980, the mean years of school completed by all persons of Asian origin was 14.2, with Asian Indians completing 16.5 years, and Koreans 14.5. Comparable mean years of schooling were as follows: European origin, 13.7 ; Latin American origin, 9.7; African origin, 12.6.[11] (All these means would be higher if the group examined was 25 and over.)

As will be noted in a later chapter, enrollment rates as well as dropout rates continue to reflect these ethnic differentials. Continuing such educational patterns in future years could contribute to the perpetuation of a two-tiered economy in which Asians and Anglos share the better jobs, while Blacks and Hispanics compete for the lower-level jobs. Furthermore, given the fact that new entrants into the work force will consist increasingly of members of what are now minority ethnic groups, it is important that the state reexamine its educational system

Figure 2
Education by Ethnic Group, 1980 (adults age 25 and older)



Source: U.S. Census, 1980

to better prepare all of its students for the economic and social challenges of tomorrow. Failure to do so could lead to economic conflict and social disunity.

A recent report by the California Assembly Committee on Intergovernmental Relations summarizes the educational challenge as follows: "Multilingualism and a shortage of workers trained for high-skilled jobs could be vexing dilemmas for the state's educational system. Dealing with a multi-ethnic society of students and the distinct cultural and economic concerns they present may be extremely difficult in an era of continuing tax and spending limitations and potential generational conflicts."[12]

Notes

1. Kirst, Michael W., "Education in California: Will the Reform Movement Continue?", *California Journal*, April 1986, pp. 184-87.

2. Bouvier, Leon F. and Philip Martin, *Population Change and California's Future*. (Washington, DC: Population Reference Bureau, Inc., 1984).

3. Quoted in "California's Changing Population," *California Tomorrow*, May 20, 1984.

4. *Population Bulletin*, "California: After 19 Million, What?" (Washington, DC: Population Reference Bureau, Inc., June 1966).

5. Moretti, Robert, "Statement of Welcome," in Kingsley Davis and Frederick G. Styles (eds.), *California's Twenty Million*. (Berkeley, CA: University of California Press, 1971) p. xiv.

6. McCarthy, Kevin F. and R. Burciaga Valdez, *Current and Future Effects of Mexican Immigration in California*. (Santa Monica, CA: Rand Corporation, May 1986) p. 1.

7. Bouvier and Martin, *op cit.*, p. 23ff.

8. Kirst, Michael, *op cit.*, p. 185.

9. McCarthy, Kevin F. and R. Burciaga Valdez, *California's Demographic Future.* (Santa Monica, CA: Rand Corporation, 1984) p. 57.

10. Goodis, Tracy Ann, "Immigration to Los Angeles: Trends, Attitudes, and Reforms," paper presented at the Annual Convention of the Population Association of America, San Francisco, CA, April 1986.

11. Treiman, Donald J. *et al.*, "Occupational Status Attainment Among Ethnic Groups in Los Angeles," paper presented at the Annual Convention of the Population Association of America, San Francisco, CA, April 1986.

12. Committee on Intergovernmental Relations, "Implications of California's Changing Ethnic Character" (Sacramento, CA: California Legislative Assembly, 1984) p. 10.

Chapter 2
California's Future Population

The Current Population

California's current population of over 27 million represents significant growth over recent decades. At mid-century, only 37 years ago, the population of the state had just passed the 10 million mark. Back in 1900, California held a mere 1.5 million.

California is now the most urban state in the nation, with 95 percent of its population residing in cities. It is also among the most ethnically diverse. According to the 1980 U.S. Census of Population, more than 15 percent of California's residents were foreign-born, and this proportion will undoubtedly increase because of continued immigration from Latin America and Asia. The United States is the destination of perhaps two-thirds of the world's immigrants. Since almost one-third of all immigrants to the United States, whether legal or illegal, settle in California, this means that California accepts over one-fifth of world immigration. In 1980, two-thirds of California's population was Anglo, almost 20 percent was Hispanic, 7.6 percent was Black, and 6.6 percent was Asian. Only Hawaii has a more ethnically diverse distribution of people.

Migration from other states has long been a major contributor to California's population growth. However, such interstate migration has decreased. A recent Urban Institute study notes: "Although immigration to California has soared since 1970, net internal migration to this region has virtually stopped because there is a decreasing propensity of people to move to California coupled with a rising tendency to leave for other states."[1]

Fertility in California has been very low for the past 15 years. Low fertility has prevailed throughout the United States, and indeed, throughout most industrialized nations. In the long run, California's population would begin to fall if fertility remained at its current levels and if migration, both domestic and international, ceased. Immigration will continue to add newcomers, but at perhaps a slightly reduced rate as a result of the 1986 Immigration Reform and Control Act, which makes clandestine immigration more difficult. However, there is no evidence to suggest changes in fertility; most experts assume that fertility will remain low for the foreseeable future.

The effects of below-replacement fertility rates and high levels of immigration are two-fold: First, the population will age in future years as fewer infants are born and more people live longer. Second, because the resident population is not replacing itself, eventually all population growth will come from immigration. Thus the state's population will become increasingly heterogeneous, i.e., composed of ethnic minorities.

Population aging and heterogeneity will present new problems for the state -- problems

that may prove difficult to solve. It is important that policymakers and others be aware of these demographic shifts and the impacts they will have on the state's future population.

The Future Population

To develop projections of the state's population, a series of assumptions about future fertility, mortality, and migration are needed. The 1980 Census of Population serves as a base to which these assumptions about demographic behavior have been applied. California's population is divided into four ethnic groups: Anglo, Hispanic, Black, and Asian and other, and each has unique demographic assumptions. These assumptions were developed in an earlier report, *Population Change and California's Future,* and are detailed in the Appendix.

By the year 2000, California's population will approach 32 million, meaning an average annual rate of growth since 1985 of about 1.5 percent, or the addition of almost half a million people each year. Despite continued low fertility after the turn of the century, the population will continue increasing and by 2030 will exceed 42 million (see Table 2). After 2030, population growth should slow due to anticipated declining fertility for all groups. Nevertheless, Lord Bryce's concern for a population of 50 million was not far-fetched; that population should be reached around 2060.

Other projections for the population of California have been prepared. In general, these agree with the estimates above. For example, according to the projections of the Center for Continuing Study of the California Economy, the state's population will approach 32.9 million by the turn of the century.[2] The Population Research Unit of the California Department of Finance projects a population of 31.4 million in 2000.[3]

The projections used in this report indicate a larger future population. For example, we project a population of 38.4 million in 2020, while the California Department of Finance projects a population of 36.9 million. Regardless of methodology and assumptions, all studies indicate that considerable growth will occur in California over the next 50 years.

Population growth in and of itself could pose problems for the environment and the quality of life. Equally important to the state's welfare is the changing age and ethnic composition of this growing population.

California is aging. In 1980, 9.5 percent of its population was 65 and over and 23 percent was under 15. By 2000, over 10 percent of all Californians will be 65 and over and 22.5 percent will be under 15. In 2030, the proportion of elderly will rise to 17 percent and that of youth will fall to 19.2 percent. The growing elderly population may be more concerned with health, pension, and safety issues than paying for public school education as we enter the 21st century.

California is becoming more and more ethnically diverse, and within two decades California will be a state without an ethnic majority. By the year 2000, the Anglo proportion of the

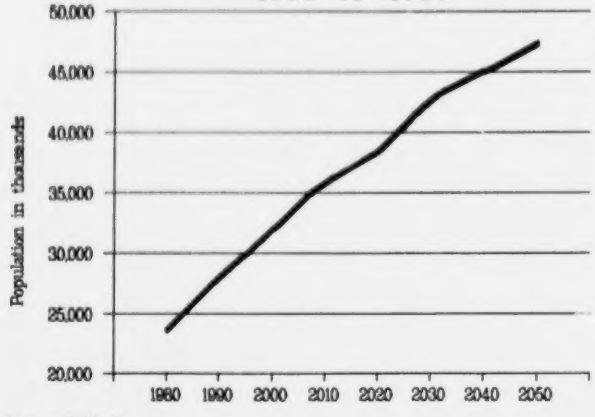
TABLE 2

PROJECTED POPULATION OF CALIFORNIA
1980 TO 2050
(in thousands)

Year	Population	Percent Change
1980	23,600	----
1990	27,880	18.1
2000	31,883	14.4
2010	35,869	12.5
2020	38,466	7.2
2030	42,665	10.9
2040	45,024	5.5
2050	47,347	5.2

Figure 3

Projected Population of California
1980 to 2050



Source: Table 2

TABLE 3

PROJECTED POPULATION BY ETHNIC GROUP 1980 TO 2030 (in thousands)

	1980	1990	2000	2010	2020	2030
Anglo	15,704	16,410	16,704	16,859	16,856	16,388
%	66.5	58.8	52.4	47.0	43.8	38.4
Black	1,783	2,098	2,353	2,578	2,761	2,862
%	7.5	7.5	7.4	7.2	7.2	6.7
Hispanic	4,544	6,736	9,085	11,548	12,799	16,273
%	19.2	24.2	28.5	32.2	33.3	38.1
Asians	1,312	2,312	3,371	4,471	5,598	6,667
%	5.6	8.3	10.6	12.5	14.6	15.6
Others	263	322	368	411	450	472
%	1.2	1.2	1.1	1.1	1.1	1.2
Total	23,606	27,878	31,881	35,867	38,464	42,662
%	100.0	100.0	100.0	100.0	100.0	100.0

population will have fallen from 66.5 percent in 1980 to 52.4 percent while that of Hispanics will rise from 19.2 to 28.5 percent and that of Asians from 5.6 to 10.6 percent. The Black share will remain stable at about 7.5 percent (see Table 3). Soon after the turn of the century, Anglos will no longer be a majority of California's population, and by 2030 Anglos and Hispanics will each represent about 38 percent of all Californians.

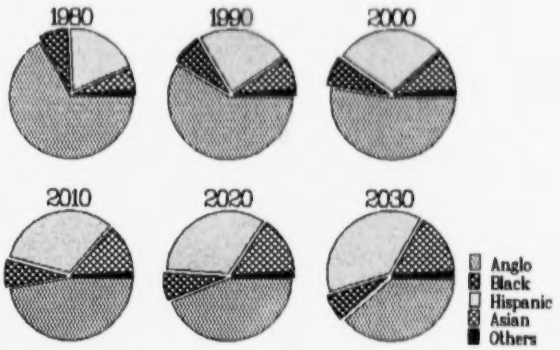
Table 4 shows that all four ethnic groups will age. In 1980, almost 12 percent of Anglos were 65 and over and less than 20 percent were under 15, while Hispanics had only 4 percent elderly and one-third were children under 15. Blacks and Asians fell between these two extremes. By 2030, almost 23 percent of Anglos will be 65 and over. The proportion of elderly Hispanics will also climb, but to only 12 percent in 2030. All four groups will age, but the Anglos will be considerably "older" than the others; Hispanics will be the "youngest."

Financing education with an increased elderly population could be exacerbated by the shifting ethnic mix. Our earlier report asked: Entering the 21st century, will a still predominantly Anglo, middle-aged, and elderly population be amenable to the expense of a growing bilingual educational program aimed at the newest minorities? On the other side of the coin, will an ever-growing population of young adults, many of them minorities, consent to growing state expenditures to care for a still predominantly Anglo elderly population?[4]

The School-Age Population

The population of children and young adults will decrease proportionately; but it will nevertheless increase considerably. The age group between 3 and 24, hereafter referred to as

Figure 4
Projected Population by Ethnic Group
1980 to 2030



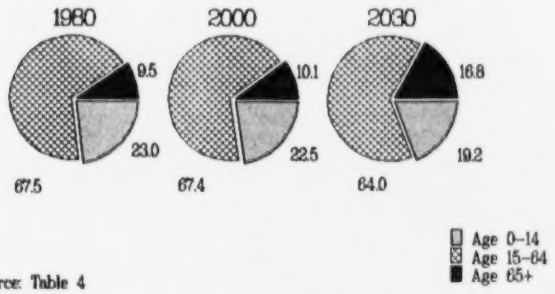
Source: Table 3

TABLE 4

PROJECTED PERCENT AGE DISTRIBUTION BY ETHNIC GROUP
1980, 2000, 2030

1980	Anglo	Black	Hispanic	Asian	Other	Total
0-14	19.7	26.6	32.6	23.2	28.0	23.0
15-64	68.5	67.1	63.6	70.1	67.4	67.5
65+	11.8	6.3	3.8	6.7	4.6	9.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
2000						
0-14	18.3	23.2	29.4	24.3	27.6	22.5
15-64	68.7	68.6	64.6	67.0	65.4	67.4
65+	13.0	8.2	6.0	8.7	7.0	10.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
2030						
0-14	16.1	18.1	22.1	20.3	20.6	19.2
15-64	61.3	64.2	65.8	65.8	67.6	64.0
65+	22.6	17.7	12.1	13.9	14.8	16.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Figure 5
Projected Percent Age Distribution
1980, 2000, 2030



Source: Table 4

the school-age population, will grow from 8.9 million in 1980 to 10.4 million in 2000 and 12.3 million in 2030 (see Table 5).

Although many of these young people will not be attending school, the demographic dynamics of this group have major impacts on the educational system. Education issues are not confined solely to those in school; as the school-age population increases, so does the number of adolescents and young adults who have not been adequately prepared for roles in a changing society.

Table 5 indicates that not only will the school-age population grow, it will become more ethnically diverse. Soon after 1980, the number of Anglos began to fall. This fall will be uninterrupted for the next 50 years and in 2030 the number of Anglos between 3 and 24 will total four million; some 1.3 million fewer than in 1980. The Black population age 3 to 24 will remain at just under 800,000 for the next half century. The number of school-age Asians will rise dramatically, from 609,000 in 1980 to almost 2.2 million in 2030. Hispanic increases will be particularly striking. In 1980, about 2.1 million Hispanics were of school age. In 2000, there will be 3.6 million and in 2030, Hispanics between 3 and 24 will number over 5.3 million; in other words, the Hispanic school-aged population will increase two and one-half times in two generations.

Two remarkable ethnic shifts will take place. First, before the turn of the century, school-age Asians will outnumber school-age Blacks. As recently as 1985, there were more

young Blacks than Asians. Second, by 2010 the Hispanic school-age population will catch up to Anglos and will surpass them by 2015. Indeed, soon after 1990, Anglos will no longer comprise more than half of the school-age population.

In the next chapter we will examine school enrollment projections for the period 1980-2030. This will enable us to estimate how many young persons of various ethnic backgrounds will be in and out of school in future years. These projections indicate that the problems arising from dropouts may be as critical as those from increased enrollments.

Future Newcomers

Our projections assume continued net immigration of 190,000 per year for the foreseeable future. They also assume that the fertility of immigrants will gradually converge to that of the resident population; that is, below the level needed to replace the population in the long run. These are relatively conservative assumptions.

Given these assumptions, the proportion of post-1980 immigrants and their descendants will necessarily increase in future years. For Anglos and to a certain extent Blacks, this reflects the continued low (or falling) fertility of these ethnic groups and the small number of persons moving to California from other states.

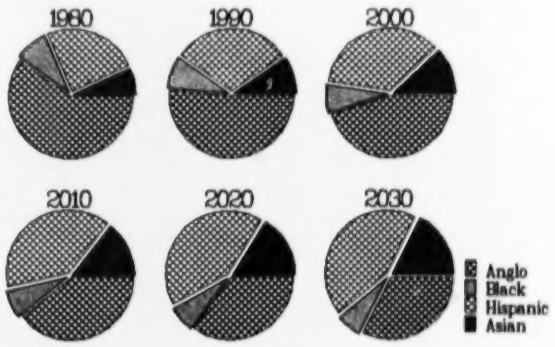
Among Asians and Hispanics, the share of post-1980 immigrants and their descendants in the school-age population becomes very large. At the turn of the century, over one-quarter of all the Hispanics and almost half of all the Asians between 3 and 24 will be either immigrants

TABLE 5

SCHOOL-AGE POPULATION BY ETHNIC GROUP
AGE 3 TO 24
(in thousands)

	1980	1990	2000	2010	2020	2030
Anglo	5,313	4,697	4,651	4,362	4,120	4,022
%	59.8	51.5	44.9	39.2	35.0	32.6
Black	775	753	799	805	795	791
%	8.7	8.3	7.7	7.2	6.8	6.4
Hispanic	2,180	2,778	3,655	4,368	4,944	5,361
%	24.6	30.5	35.3	39.2	42.0	43.4
Asian	609	884	1,260	1,600	1,901	2,167
%	6.9	9.7	12.1	14.4	16.2	17.6
Total	8,877	9,112	10,365	11,135	11,760	12,341
%	100.0	100.0	100.0	100.0	100.0	100.0

Figure 6
Projected School-Age Population
by Ethnic Group, Age 3 to 24



Source: Table 5

or the children of immigrants who came to the state after 1980. We can assume that most will be either foreign-born or the children of immigrants. By 2030, almost half of the Hispanics and over 71 percent of the Asians between 3 and 24 will be either immigrants or the descendants of post-1980 immigrants. These will undoubtedly include some second- and perhaps even third-generation "immigrants" (see Table 6).

These statistics must be interpreted very carefully. The proportion of immigrants and their offspring increases when the fertility of the resident population drops so that fewer residents are entering the age group in question. These effects are exemplified in the Anglo and Black groups. Among Asians and Hispanics, fertility is falling toward the resident rate, but the number of immigrants entering the state remains high. Such immigration creates a school-age cohort that may be in need of special attention by the schools of California.

This ongoing challenge for California is different from that experienced in the early 20th century. At that time, annual levels of immigration to the United States were as high or even higher. However, with World War I and the passage of restrictive immigration legislation, the number of newcomers declined drastically. This decline probably expedited the adaptation of these immigrants into American society.

As we enter the 21st century, the situation is different. There is no end in sight to the current immigration wave. As a result, past adaptation patterns may not be reliable predictors of the future. Looking just at the school-age population where the acculturation process begins,

TABLE 6

POST-1980 IMMIGRANTS AND DESCENDANTS AGE 3 TO 24 IN PROJECTED CALIFORNIA POPULATION (number and percent of ethnic group)

	1990	2000	2010	2020	2030
Anglo	31,186	63,448	98,751	130,588	162,363
%	1	1	2	3	4
Black	16,796	34,969	54,520	71,465	87,578
%	2	4	7	9	11
Asian	247,808	609,793	953,534	1,359,182	1,541,098
%	31	48	60	71	71
Hispanic	435,284	1,005,797	1,617,509	2,147,934	2,608,399
%	16	28	37	43	49

in 12 years there will be almost one million Hispanic school-age children who are either immigrants themselves or the children of immigrants who came to California after 1980, and the numbers are even more dramatic for Asians.

Conclusion

Radical shifts in the size and the composition of the school-age population of California will occur in future years. In a sense this is almost preordained given the demographic behavior of Californians: past, present, and future. If fertility stays low and if immigration levels remain at current levels, these shifts in the size and composition of this age group will take place. The purpose of this report is to alert Californians to these changes in order to best prepare for them.

Notes

1. Muller, Thomas and Thomas Espenshade, *The Fourth Wave.* (Washington, DC: The Urban Institute Press, 1985) p. 44.

2. Center for the Continuing Study of the California Economy, *Projections of Ethnic Total Population in California.* (Palo Alto, CA: 1985).

3. Population Research Unit, *Population Projections for California Counties 1980-2020.* (Sacramento, CA: California State Department of Finance, October 1983).

4. Bouvier, Leon F. and Philip L. Martin, *Population Change and California's Future.* (Washington, DC: Population Reference Bureau, Inc., 1985).

Chapter 3
California's Educational System

An educational system includes the students and the teachers, schools, equipment, and training for those who will become tomorrow's workers and citizens. Schooling involves large, complex, and expensive institutions.

California has close to 4.8 million pupils in almost 12,000 public and private elementary and secondary schools. These schools employ well over 200,000 teachers. About 250,000 Californians graduate from high school each year, and many attend one of the state's public and private colleges and universities, which have almost 1.8 million students enrolled. Public education accounts for some 55 percent of California's budget expenditures, and schools receive additional local, federal, and private funds.

The enormity of California's educational system can best be appreciated when it is compared to the educational systems of other large states. California has by far the largest number of public schools of any state in the nation. Texas, with 5,356 primary and secondary schools, ranks second and New York is third with 4,103. At the college level, California's 135 institutions far outnumber those of Texas (96) and New York (86).

The number of students enrolled in California public primary and secondary schools is also the highest in the nation. In the 1985-86 school year almost 4.3 million children attended California public schools. Texas ranked second with 3.1 million and New York ranked third with 2.8 million. The large number of students is reflected in the size of the instructional staff. In the autumn of 1985, 223,552 education professionals were employed by the state and local governments. New York ranked second with 183,806 and Texas was third with 180,318.

How has this vast educational system benefitted California? California has a higher proportion of high school and college graduates than most other states. In 1982-83 about 74 percent of all California adults had graduated from high school, compared with 66 percent nationwide. Similarly, about 20 percent of all Californians age 25 and older have completed four years of college, compared to 16 percent nationwide. The state's well-educated labor force is an important explanation of California's status as the fifth largest economy in the world.

This large and complex educational system now faces new problems. Increasing ethnic diversity changes the demands made upon the educational system just as the shifting economy forces schools to change the way that they prepare students for the world of work.

Current School Enrollments

Student enrollment in California's public elementary and secondary schools totalled 4,255,554 in the 1985-86 school year. This represents a 2.5 percent increase in enrollment over

the previous year, and a 5.2 percent enrollment increase since 1980. Private school enrollment totalled 536,920 students in 1985-86, down by more than 3,000 from 1984-85 but higher than the levels of five years ago.

California therefore now has almost 4.8 million students enrolled in its public and private elementary and secondary schools, compared with 4.6 million pupils 5 years previously.[1]

Between 1967 and 1980, public school enrollments dropped sharply, from over 4.8 million to 3.9 million. Since 1980 enrollments have once again begun to climb, surpassing 4.2 million in the autumn of 1985. These enrollment fluctuations demonstrate the impact of the baby boom and baby bust. The "baby-boomers" crowded into elementary schools in the 1960s but the "baby bust" left classrooms empty in the 1970s. The 1980s have seen another upsurge in school enrollments due to the baby boom "echo" -- the offspring of the large number of now-adult boomers -- as well as increased immigration.

Table 7 illustrates the effect of increased immigration. In 1967, almost three-quarters of all public school students were Anglo, compared with 3.1 percent Asian and other ethnic groups, 8.4 percent Black, and 14.3 percent Hispanic. The Anglo majority had fallen below 60 percent by 1979 and it had dropped to 52 percent for the 1985-86 school year. The Hispanic proportion rose from 14.3 percent in 1967 to 29 percent in 1985. The percentage of Blacks remained fairly stable during this time period, while Asians and other ethnic groups grew from 3 percent to 10 percent. Numerical changes were even more dramatic. Enrollments of Anglo pupils decreased from 3.6 to 2.2 million between 1967 and 1985, while the number of Hispanic students rose from less than 700,000 to 1.2 million. Black enrollments remained just above 400,000, and those for Asian ethnic groups increased almost three-fold, from 153,000 to 416,000.

Immigrants tend to be younger than native-born residents of the state and they often have somewhat larger families. As a result, immigrant populations are "younger"; they include relatively more young than elderly people. In the autumn of 1985, Anglos comprised 52 percent of the total public school enrollment: 57 percent of secondary school students were Anglo, but only 49.6 percent of elementary school pupils (see Table 8). Indeed, only among seventh and eighth graders were Anglos a majority of the school population. Hispanics, by contrast, constitute 29 percent of the total public school enrollment but are 23 percent of secondary school enrollment and 31 percent of elementary enrollment. In Los Angeles, Anglos are "15 percent of the early elementary enrollments, while Hispanics are 60 percent, Blacks are 16, and Asians are about 4 percent, as of Fall 1985."[2]

Both very low fertility on the part of the native-born residents of California and substantial increases in immigration have contributed to major shifts in the size and ethnic composition of the primary and secondary school populations of the state. These trends will undoubtedly continue in future years.

TABLE 7

K-12 ENROLLMENTS IN CALIFORNIA PUBLIC SCHOOLS BY ETHNIC GROUP SELECTED YEARS (in thousands)

Year	Anglo	Black	Hispanic	Asian	Total
1967	3,593	405	690	153	4,841
%	74.2	8.4	14.3	3.1	100.0
1969	3,369	405	687	113	4,574
%	73.7	8.9	15.0	2.4	100.0
1971	3,230	423	725	167	4,545
%	71.1	9.3	16.0	3.6	100.0
1973	3,092	434	766	156	4,448
%	69.5	9.8	17.2	3.5	100.0
1979	2,382	398	930	265	3,975
%	59.9	10.0	23.4	6.7	100.0
1981	2,283	399	1,045	319	4,046
%	56.4	9.9	25.8	7.9	100.0
1984	2,205	402	1,159	385	4,151
%	53.1	9.7	27.9	9.3	100.0
1985	2,213	403	1,223	416	4,255
%	52.0	9.5	28.8	9.7	100.0

Source: Population Research Unit, California State Department of Finance

TABLE 8

PERCENT DISTRIBUTION OF PUBLIC SCHOOL ENROLLMENT, GRADES K-12 BY ETHNIC GROUP, 1985

Grade	Anglo	Black	Hispanic	Asian	Total
K	49.1	8.6	33.2	9.1	100.0
1	48.9	9.7	32.5	8.9	100.0
3	48.9	9.7	32.1	9.3	100.0
5	48.9	9.5	31.4	10.2	100.0
8	52.7	9.4	27.4	10.5	100.0
K-8	49.6	9.5	31.2	9.7	100.0
10	55.3	10.1	24.7	9.9	100.0
12	61.1	8.5	19.4	11.0	100.0
9-12	57.1	9.4	23.4	10.1	100.0

Source: Population Research Unit, California State Department of Finance

California's postsecondary public education system is considered among the best in the world. Together, the community colleges, the California State University, and the University of California enroll some 1.6 million students. About 72 percent of the students attend the state's 106 community colleges, 20 percent are in the 19 branches of the California State University, and 8 percent are enrolled at the nine campuses of the University of California. To put these numbers in perspective, California's community colleges enroll 10 percent of *all* U.S. college students. Current public college enrollments are about 300,000 higher than they were in the early 1970s, but are lower than the 1.8 million students of 1980-81.

As with its primary and secondary schools, California's state colleges and universities have witnessed significant shifts in ethnic composition over the past decade (see Table 9). Ten years ago, Anglos constituted at least three-quarters of all students in all three segments of the state system. At the University of California, for example, Anglos were then 80 percent of all students. By 1985, Anglos were less than two-thirds of the student body in all three segments. Asians have gone from comprising only 6.3 percent of all postsecondary students in 1976 to about 20 percent in 1985. At the University of California, close to one-quarter of all students

TABLE 9

PERCENTAGES OF VARIOUS ETHNIC GROUPS IN TOTAL CREDIT HEADCOUNT ENROLLMENTS OF CALIFORNIA'S SEGMENTS OF HIGHER EDUCATION, FALL 1977 TO FALL 1985

Segment	Fall 1977	Fall 1979	Fall 1981	Fall 1983	Fall 1985
California Community Colleges					
Anglo	72.0	72.1	70.0	67.6	62.8
Black	10.4	9.6	9.2	9.3	7.4
Hispanic	10.6	11.1	12.0	12.3	12.2
Asian & other	6.9	7.2	8.8	10.7	17.6
California State University					
Anglo	76.6	73.2	71.7	71.4	65.0
Black	6.8	7.3	6.9	6.2	5.3
Hispanic	7.7	8.9	9.0	9.3	8.9
Asian & other	8.9	10.7	12.4	13.1	20.8
University of California					
Anglo	79.3	78.3	75.9	73.0	66.1
Black	4.2	4.0	4.0	4.1	4.0
Hispanic	5.5	5.7	5.9	6.5	7.1
Asian & other	11.1	12.1	14.3	16.3	22.8

Source: California Postsecondary Education Commission

TABLE 10

ENROLLMENT RATES OF CALIFORNIA STUDENTS BY AGE AND ETHNIC GROUP, 1985

	Anglo	Black	Hispanic	Asian	Total
Male					
3-5	62.6	61.0	45.3	54.6	56.9
6-12	98.7	98.1	97.8	98.0	98.4
13-17	95.6	95.7	90.0	96.9	93.7
18-24	35.3	30.8	23.1	57.0	33.5
Total	69.8	69.3	63.0	78.1	68.5
Female					
3-5	62.8	62.5	45.1	54.4	57.0
6-12	98.7	98.3	97.7	97.3	98.3
13-17	95.4	95.4	89.1	95.7	94.0
18-24	35.1	34.4	22.7	57.0	33.8
Total	69.8	70.7	63.6	77.3	68.9

are Asian. There are three times more Asian than Hispanic students and almost five times more Asian than Black students.

School Enrollment Rates

Ascertaining age-sex specific enrollment rates for children and young adults is a formidable but necessary task in the preparation of school enrollment projections. Although such information is sometimes available for public schools, it is not available for private schools. Between 10 and 12 percent of all California students attend private schools. We have relied on 1980 Census information to develop a series of enrollment rates which fairly accurately portray attendance in California schools, both private and public (see Table 10).

Four age groups have been categorized: pre-primary (3-5), primary (6-12), secondary (13-17), and postsecondary (18-24). While not all children age 6 through 12 are enrolled in primary schools, most are, and we will therefore refer to these age groupings as representing the associated school levels.

There are few differences in enrollment rates between males and females across all four ethnic groups and at all school levels. One minor exception appears among Blacks age 18-24, where women are somewhat more likely than men to be in school. These similarities in enrollments by sex allow us to concentrate on total enrollments by ethnic origin.

Three points warrant attention when examining ethnic differences in enrollment rates:

First, the somewhat surprising similarities between Anglos and Blacks. Except for college males, Black and Anglo enrollment rates are essentially the same. This is expected through age 12, but differences are minimal at the secondary level as well. A further examination of

detailed tables from the 1980 Census shows that through age 19, Blacks and Whites (not of Spanish origin) have very similar enrollment rates. Indeed, among persons 16 to 17, the Black rate is somewhat higher: 92.0 compared to 90.5.[3]

Second, Asians have the highest enrollment rates. While Asian children 3 to 5 exhibit slightly lower enrollment rates than their Anglo and Black counterparts, the opposite is true among those 13 and over. The difference is small at the secondary level but widens considerably at college age; 57 percent of 18- to 24-year-old Asians were attending school in 1980, versus 37 percent for the total population. This statistic reinforces the perception that Asians value education highly and encourage children to attend college.

Third, enrollment rates are low for Hispanics of all ages. More than half of all Hispanic children of pre-primary age are not attending nursery school or kindergarten, while over 60 percent of Anglo and Black children are enrolled. Less than one-quarter of Hispanics between 18 and 24 are in school, compared to over one-third of Anglos and Blacks and 57 percent of Asians. Even at the secondary level, differences in attendance are substantial. Less than 90 percent of the Hispanic adolescents between 13 and 17 attend school, reflecting their high dropout rate. There is some evidence indicating an increase in attendance among first- and second-generation Mexican-Americans as compared to the attendance of Mexican-born children. For example, Kevin McCarthy and R. Burciaga estimated that the enrollment rate for adolescents ages 16 and 17 was 62 percent for Mexican-born and 86 percent for second-generation Mexican-Americans.[4]

Projected Enrollments

According to the 1980 Census, about 5.9 million Californians between 3 and 24 were enrolled in the state's public and private schools, from pre-primary to college and university. In 1985-86, there were about six million enrolled and, assuming a continuation of current enrollment rates, there will be 6.5 million enrollees in 1990 and about 7.5 million in 2000 (not all persons in California schools are Californians age 24 or younger). Thirty years later, school attendance should surpass 8.7 million. Thus, over the half century between 1980 and 2030, the state can expect to see its school enrollment climb by about 2.6 million or almost 50 percent (see Table 11).

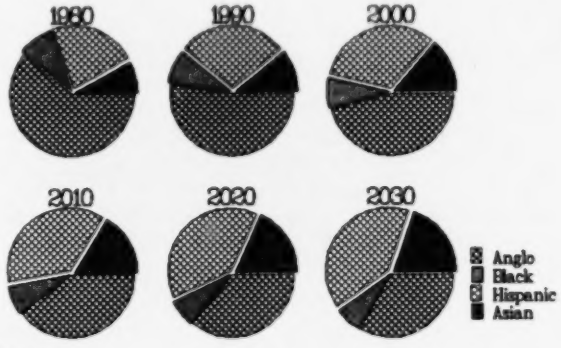
The ethnic composition of the school population will change. In 1980, just over 60 percent of students were Anglo, with 23 percent Hispanic, 9 percent Black, and 8 percent Asian. By 1990, Asians will surpass Blacks and comprise over 10 percent of all California students. Hispanics will represent 29 percent and Anglos 52 percent. The turn of the century will mark a first for the state, as no ethnic group will form a majority of the school population. By around the year 2015, Hispanics will be the most numerous group. In 2030, Anglos will be one-third of

TABLE 11

PROJECTED ENROLLMENT BY ETHNIC GROUP, 1980 TO 2030
(in thousands)

	Anglo	Black	Hispanic	Asian	Total
1980	3,708	542	1,379	473	6,102
%	60.8	8.9	22.6	7.8	
1990	3,404	538	1,855	688	6,485
%	52.5	8.3	28.6	10.6	
2000	3,416	585	2,439	1,003	7,443
%	45.9	7.9	32.8	13.5	
2010	3,109	569	2,854	1,251	7,783
%	39.9	7.3	36.7	16.1	
2020	3,002	571	3,239	1,495	8,307
%	36.1	6.9	39.0	18.0	
2030	2,910	564	3,479	1,701	8,654
%	33.6	6.5	40.2	19.7	

Figure 7
Projected Enrollment by Ethnic Group
1980 to 2030



Source: Table 11

the school population compared to 40 percent for Hispanics, 20 percent for Asians, and 7 percent for Blacks.

A look at specific grade levels is interesting (see Table 12). Within five years, Anglos will no longer be the majority of primary school pupils. Within 20 years Hispanics will outnumber Anglos in primary schools. Asians already equal Blacks in the primary schools and, at current enrollment rates, will surpass Hispanics at the postsecondary level within 50 years. These somewhat surprising shifts reflect variations in school attendance at different levels of the educational system among the ethnic groups of the state.

Proportional shifts are important but numerical changes are perhaps even more important for policymakers and planners. Between 1990 and 2030, one million more children will be enrolled in the pre-primary and primary schools of California (defined as age 3-12). Anglo pre-

TABLE 12

PROJECTED ENROLLMENT DISTRIBUTION BY AGE AND ETHNIC GROUP, 1980 TO 2030 (percent)

	Anglo	Black	Hispanic	Asian
I. Pre-Primary (age 3-5)				
1980	57.5	10.0	25.4	7.1
1990	53.8	9.1	26.7	10.3
2000	46.8	8.4	31.7	13.1
2010	41.5	8.0	34.4	15.1
2020	39.8	7.6	35.9	16.7
2030	37.5	7.3	37.0	18.2
II. Primary (age 6-12)				
1980	58.1	8.8	26.0	7.1
1990	50.5	8.2	31.8	9.6
2000	43.6	7.7	36.2	12.5
2010	37.7	7.1	40.7	14.5
2020	34.9	6.7	42.3	16.1
2030	32.3	6.4	43.7	17.6
III. Secondary (age 13-17)				
1980	61.7	9.2	22.1	7.0
1990	53.0	8.2	29.3	9.4
2000	47.2	8.1	32.4	12.3
2010	40.3	7.4	37.5	14.7
2020	36.0	7.0	40.4	16.6
2030	33.7	6.6	41.7	18.0
IV. Postsecondary (age 18-24)				
1980	65.1	8.2	15.4	11.3
1990	56.7	8.2	18.7	16.4
2000	49.9	7.5	23.2	19.4
2010	43.7	7.2	25.3	23.8
2020	37.6	6.6	28.4	27.4
2030	34.7	6.3	29.4	29.6

TABLE 13

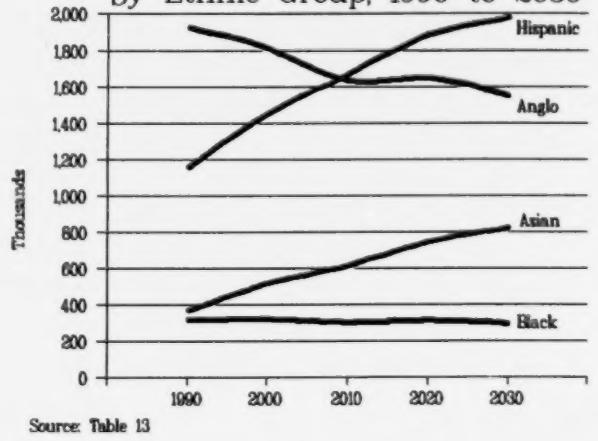
PROJECTED NUMBER OF STUDENTS AGE 3 TO 12 BY ETHNIC GROUP 1990 TO 2030 (in thousands)

Year	Anglo	Black	Hispanic	Asian
1990	1,925	314	1,155	366
2000	1,813	320	1,452	518
2010	1,635	308	1,671	617
2020	1,647	316	1,889	746
2030	1,551	304	1,980	825

primary and primary school enrollments will drop from 1.9 million in 1990 to 1.5 million in 2030 (see Table 13). Black enrollments at those grades will remain fairly constant, falling from 314,000 to 304,000. Over the same period the number of Hispanic primary and pre-primary students will grow from 1.1 million to almost two million. Asians will increase their numbers in primary and pre-primary grades from 366,000 in 1990 to 825,000 in 2030.

The high school population (defined as age 13-17) of California will also experience dramatic shifts in size and composition. Enrollments will increase by about 900,000 over the forty-year period beginning in 1990. However, the number of Anglo secondary school students will drop from 948,000 to 891,000, and Black enrollments will increase slightly, from 147,000 to

Figure 8
Projected Number of Students Age 3 to 12 by Ethnic Group, 1990 to 2030



Source: Table 13

TABLE 14

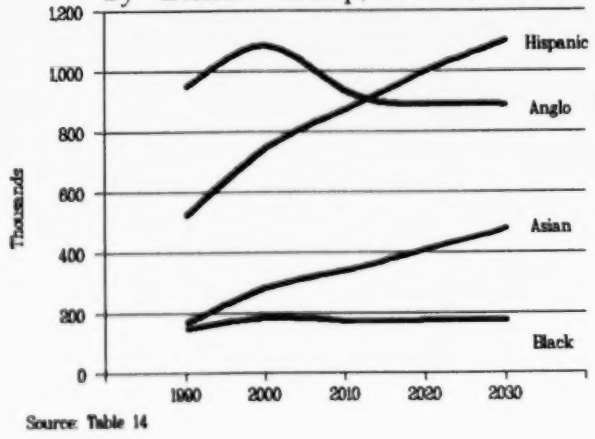
PROJECTED NUMBER OF STUDENTS AGE 13 TO 17 BY ETHNIC GROUP, 1990 TO 2030 (in thousands)

Year	Anglo	Black	Hispanic	Asian
1990	948	147	525	169
2000	1,087	186	746	283
2010	939	173	874	342
2020	892	173	1,000	410
2030	891	175	1,102	477

175,000 (see Table 14). The number of Hispanic high school students will more than double between 1990 and 2030, going from 525,000 to 1.1 million. Asian enrollments will soar from 169,000 to 477,000.

The number of postsecondary students (defined as age 18-24) will also rise in future years. From 933,000 in 1990, enrollments should approach 1.4 million in 2030. To be sure, these population projections do not accurately portray college attendance. Many college students are under 18 and many more are beyond 24. In addition, a number of out-of-state persons attend California colleges and universities. These projections simply look at the age group 18 through

Figure 9
Projected Number of Students Age 3 to 17 by Ethnic Group, 1990 to 2030



Source: Table 14

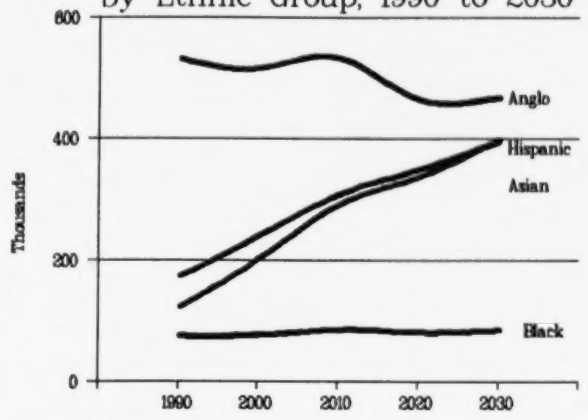
TABLE 15

PROJECTED NUMBER OF STUDENTS AGE 18 TO 24 BY ETHNIC GROUP, 1990 TO 2030
(in thousands)

Year	Anglo	Black	Hispanic	Asian
1990	531	77	175	123
2000	516	78	240	202
2010	534	88	309	292
2020	463	82	350	338
2030	468	85	397	399

24. The drop in Anglo enrollments will be small, from 531,000 in 1990 to 468,000 in 2030 (see Table 15). Black enrollments are expected to rise slightly, reaching 85,000 in 2030 compared to 77,000 in 1990. The number of Hispanic college students will more than double, reaching almost 400,000 by 2030. Asian enrollments will also approach 400,000 compared to 123,000 in 1990. It is important to emphasize the assumptions which underlie these projections. The most important assumption is that fertility will remain low among California residents and the fertility of immigrants will gradually converge to resident levels by 2030. Net immigration into the state is assumed to be 190,000 persons annually, a number that includes only a few illegal entries. Net

Figure 10
Projected Number of Students Age 18 to 24 by Ethnic Group, 1990 to 2030



Source: Table 15

migration from other states is assumed to be zero. School enrollment rates for 1980 were held constant through 2030, even though Hispanic enrollment rates should increase. Furthermore, age groups were assumed to be equivalent to grade levels. Changes in enrollment rates or demographic behavior will affect these projections considerably, although the trend will undoubtedly be in the direction indicated here.

The Population Research Unit of the California State Department of Finance has prepared short-term projections of public and private school enrollments. These "enrollment projections reveal total graded public school enrollment increasing at least through 1995. ... By 1995, total enrollment is predicted to exceed 5.4 million students, an increase of 1.17 million or 27.5 percent over 1985."[5] The Population Research Unit projects private school enrollments to increase from 537,000 students in 1985 to 642,000 in 1995.[6] Our calculations suggest that enrollment among children age 3 through 17 will reach 5.6 million in 1990 and 6.4 million in 2000. Despite the use of different statistical techniques, there is agreement that about six million children will be enrolled in the public and private schools of California in 1995.

In July 1986, the Population Research Unit updated its public postsecondary school projections and made them available. Total enrollments in the three state systems are projected to reach 1.8 million in 1995.[7] Another 200,000 may be enrolled in California's private colleges. At first glance, this differs considerably from our numbers -- 940,000 in 1990 and almost 1.1 million in 2000. However, in the academic year 1985-86, about half (745,664 of the 1,544,138) of all students attending any segment of the California State system were 25 years of age or older. It seems likely that only about 900,000 of the projected 1.8 million enrollees in 1995 will be under 25.

School enrollments in California, whether pre-primary, primary, secondary, or postsecondary, will increase in future years. Equally important will be the dramatic shifts that will occur in the ethnic composition of the school-age population. Together these factors will pose serious challenges for the educational system of California.

Notes

1. Policy Analysis for California Education (PACE). *Conditions of Education in California, 1986-87.* (Berkeley, CA: PACE Policy Paper PP86-10-5, October 1986) p. 17.

2. Hodgkinson, Harold L., *California: The State and Its Education System.* (Washington, DC: Institute for Educational Leadership, 1986) p. 5.

3. 1980 Census of the Population, *General Social and Economic Characteristics: California.* Table 99 in Vol. I, Chapter C, Part 6, Section I, 6-152.

4. McCarthy, Kevin and R. Burciaga Valdez, *Current and Future Effects of Mexican Immigration in California.* (Santa Monica, CA: Rand Corporation, November 1985) p. 57.

5. *Conditions..., op. cit.*, p. 21.

6. Population Research Unit, Special Projections of Private School Enrollments. (Sacramento, CA: California State Department of Finance, 1986).

7. Population Research Unit, Special Projections for UC, CSU, CCC. (Sacramento, CA: California State Department of Finance, July 2, 1986).

Chapter 4
Challenges for the Educational System

The Policy Analysis for California Education (PACE) report concluded that there are two fundamental characteristics which describe California's public school enrollment today and for the next decade: growth and diversity. School enrollment is growing rapidly, matching the growth exemplified by the post-World War II baby-boomers. Enrollment in California is not only larger in absolute numbers than in any other state, but it is also increasing at a faster rate than in any other state, except Utah. Furthermore, the composition of California's public school system is diverse. Members of minority groups will likely represent a majority of students in the near future, limited-English-proficiency (LEP) students are rapidly rising in number, the number of students from poverty backgrounds seems to rise every year, and a growing proportion of the school-age population is considered at risk. Growth and diversity, finally, pose difficult challenges for public schools, in terms of both money and curricula.[1] These challenges will dominate the education debate through 1995. Demographic shifts suggest that they will become even more critical in the 21st century.

Qualitatively as well as quantitatively, California's educational system faces serious challenges as it prepares for the 21st century. Given the demographic projections, it is clear that changes may be necessary if the state is to maintain the overall quality of its work force and be in a position to compete with other states and nations in the future world economy.

Robert Reich writes: "Our economic future must be rooted in the only resource that will remain uniquely American: Americans themselves. The industries that will sustain the next stage of America's economic revolution will necessarily be based on a skilled, flexible, less hierarchical organization of work."[2] Business leaders want high school graduates who have a command of English, have reasoning and problem-solving skills, are able to read, write, and compute, and have an understanding of science and technology.[3]

Four Challenges: Attrition, Academic Achievement, Teachers, and Culture

It is the responsibility of the school system to prepare students for the roles they will play in tomorrow's society. Four challenges appear important: First, attrition levels and the complementary problem of keeping adolescents, particularly Hispanics, in school. Second, the need to improve the academic achievement of minority students so that the quality of the work force improves. Third, the need to train a sufficient number of teachers to meet future enrollment demands. Fourth, the importance of acculturating immigrants and their children. Finally, California must develop a commitment to provide the funds necessary for excellence in

TABLE 16

PROJECTED NUMBER OF PERSONS AGE 13-17 NOT ENROLLED IN SCHOOL BY ETHNIC GROUP, 1990 TO 2030

Year	Anglo	Black	Hispanic	Asian	Total
1990	44,638	6,797	61,417	6,546	119,398
2000	51,197	8,617	87,392	10,974	158,180
2010	44,248	7,983	102,320	13,282	167,833
2020	42,026	7,987	117,136	15,888	183,037
2030	41,976	8,085	128,990	18,466	197,517

education.

The attrition or dropout rate in California schools is high and perhaps rising. Reliable data are not available, largely because dropout statistics cannot determine whether students who begin 9th or 10th grade but do not graduate four years later move out of state or abroad, switch to a private school, or go to work; but estimates of the dropout rate range from 20 to 40 percent. For example, the attrition rate in California's high school class of 1985 was estimated to be about 37 percent:[4] for every 100 students enrolled in the 9th grade four years previously, 37 "dropped out" before graduation and apparently did not enter another school. California ranked 44th in the nation in its graduation rate as measured by attrition.[5] The California Assembly Office of Research identified higher rates for members of minority groups -- 40 percent for Blacks and American Indians, and 39 percent for Hispanics, but only about 15 percent for Asians.[6] Attrition rates may not reflect all dropouts: "There is disagreement over the magnitude of the dropout problem and how best to measure it. Statewide attrition, the loss of students from the system between the ninth grade and graduation, has been used as a proxy for a dropout rate. Unfortunately, this figure may understate the magnitude of the problem."[7] Nevertheless, the differentials by ethnic background in the ranking among the states are real.

Table 16 shows the number of adolescents between 13 and 17 who will not be enrolled in school in future years, according to the rates used in this study. From about 100,000 dropouts today, 120,000 will be in the dropout category in 1990, and that number will grow to almost 200,000 by 2030 if current enrollment patterns and dropout rates are maintained. Over half of today's dropouts are Hispanic, a proportion that may increase in the future.

If more minority students remain in school, enrollments will rise faster and ethnic shifts will be more pronounced. To illustrate the significance of such a change, the enrollment growth and ethnic shifts which would result if Hispanic children attended school at the same rate as Anglo children were calculated (see Table 17); at this rate an additional 220,000 children would be expected in California classrooms in 1990 and that number would rise in future years.

TABLE 17

PROJECTED HISPANIC ENROLLMENT AT ANGLO RATES, 1990 TO 2030 (percent)

	Original	New Enrollment	Difference
1990	1,854,891	2,074,431	219,540
%	28.6	30.9	
2000	2,438,575	2,724,509	285,934
%	32.8	35.3	
2010	2,853,915	3,202,369	348,454
%	36.7	39.1	
2020	3,238,952	3,630,477	391,525
%	39.0	41.3	
2030	3,478,662	3,905,172	426,510
%	40.2	42.6	

Similarly, the proportion of all students of Hispanic origin would increase, reaching 42 percent by 2030. These changes, although dramatic, should not present insurmountable problems. An increase of 4 percent in school enrollments is a small price to pay to prepare more young people for California's future.

Most students drop out of high school because of poor academic performance, family circumstances, and for personal and economic reasons. Most dropouts have failed courses on their records, and many fear that they will not pass enough courses to earn a high school diploma with their classmates. Many dropouts are from single-parent families, and some drop out to get a job to help support their families or themselves. Many of the male dropouts do not believe that they will graduate even if they remain in school, so they do not perceive any penalty in "getting a start" in the labor market. Many teenage girls drop out to become teenage mothers; the California Senate Office of Research estimates that 80 percent of the state's pregnant teens do not graduate from high school.

The economic rationale for dropping out presents a conundrum, especially for Hispanics. As the number of teenagers entering the work force falls, entry-level wages should rise well above the (current) minimum wage, providing an even stronger economic incentive to stop attending school. This incentive is strongest for students in families that do not value education but can help teens find entry-level jobs; some research indicates that Hispanic dropouts are more likely to find jobs than other dropouts, possibly because of their better access to job information.[8] Most research indicates that dropouts and other young workers who do not form families spend most of their earnings on consumer goods such as cars and

TVs, maintaining an "affluent" lifestyle as long as they remain at home to reduce living costs. Dropouts who start families are more likely to have larger-than-average families, to have limited job opportunities, and to turn to public assistance.

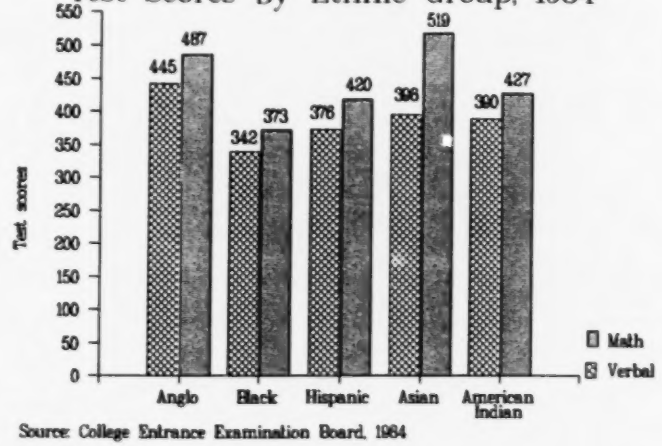
Second, "The changing ethnic composition of the state will adversely impact on the state's ability to maintain an educated, skilled, and adaptable work force unless action is taken immediately to identify and expand programs that will increase the educational achievements of Hispanics and Blacks, and underachieving non-Hispanic Whites."[9] We should also add the newest immigrants from Southeast Asia.

Over the past decade there has been a steady decline in academic achievement on all standardized tests in California, although some progress was noted in 1985.[10] In 1984, for the first time, the California Assessment Program (CAP) collected achievement scores for 8th graders by ethnic background.[11] The results clearly indicate that academic achievement varies by ethnic group. In reading and writing, Anglos score higher than Asians and considerably higher than Blacks and Hispanics. In mathematics, Asians perform better than Anglos who in turn far outdistance Hispanics and Blacks. As the proportion of minority students increases, overall achievement levels will drop unless the scores of both Hispanics and Blacks rise. For example, if the scores are held constant as the size of each ethnic group changes, the total reading scores for all California students will decline from 240 in 1985 to 236 by 2000 and 230 in 2030. Similar drops will be noted in writing and mathematics.

The problem is not limited to California. The national mean Scholastic Achievement Test

Figure 11

National Mean Scholastic Aptitude Test Scores by Ethnic Group, 1984



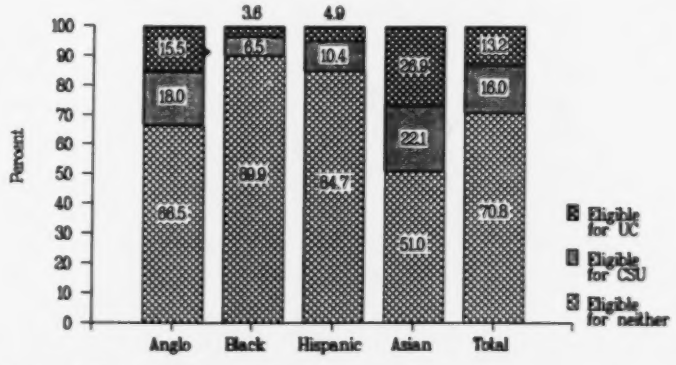
Source: College Entrance Examination Board, 1984

(SAT) scores by ethnic group are noted in Figure 11. Anglos score considerably higher than other groups on the verbal section while Asians score particularly well in the math section. Blacks and Hispanics score well below average on both tests.

California's public higher-education system could consist of only Anglo and Asian students if Hispanic and Black educational achievement fails to improve. The University of California (UC) accepts the top 12 percent of graduating high school students. About 15.5 percent of the Anglo class of 1983 qualified for admission to the University, versus 26.9 percent of the Asian graduates (see Figure 12). On the other hand, only 4.9 percent of Hispanic and 3.6 percent of Black high school graduates qualified. The situation is similar for the California State University (CSU) system. Almost half of the Asian and one-third of the Anglo graduates qualify for acceptance, compared to 15.3 percent for Hispanics and 10.1 percent for Blacks.[12] A two-tier higher education system could translate into a two-tier economy.

California's colleges and universities have raised their admissions standards in order to encourage the high schools to re-emphasize communication and reasoning skills. These stiffer requirements have been controversial; some minority groups charge that new requirements such as a year of laboratory science and four years of English (excluding remedial and English as a Second Language courses) will keep members of minority groups out of colleges and universities. According to one estimate, over 90 percent of the Asians, Blacks, and Hispanics enrolled in California state universities in 1986-87 would not have been admitted under the new requirements.[13]

Figure 12
Eligibility of 1983 California Public High School Graduates of Various Ethnic Groups



Source: California Postsecondary Education Commission

Another factor to consider is the educational attainment of the adult population in future years and how it will be affected by enrollment rates among the youth of the state. As noted earlier, the 1980 Census indicated that 77 percent of all Anglos 25 and older had graduated from high school, and 21 percent had completed at least four years of college. The comparative figures for other groups are: Asians, 76 and 31 percent; Blacks, 68 and 11 percent; and Hispanics, 44 and 6 percent. Unless Blacks and Hispanics remain in school longer, the overall educational achievement of the adult population of California will decline in future years.

The message is clear: Hispanic and Black students must be convinced that it is in their own best interests to complete high school. Educators, in turn, must work to improve the achievement levels of these students. The number of students with limited English proficiency (LEP), now about 525,000, is expected to increase considerably. Special attention must be given to these students to prepare them for their future roles in society.

Third, California now employs about 163,000 teachers. It is estimated that 160,000 new teachers must be hired over the next 10 years because of enrollment growth and teacher attrition. Even more new teachers will be needed after the turn of the century.

California faces critical choices with respect to the quantity and quality of teachers during the next decade, when perhaps half of its present elementary and secondary instructors will retire. Many developments make the retirement of such a large proportion of the state's teachers both a problem and an opportunity. The 1990s' shortages result from demographic shifts -- those retiring were the teachers of the large post-war baby boom, while the 1990s' shortages are caused by increasing enrollments of the children of the baby-boomers and immigrants, and the fact that few teachers were hired during the "baby bust" period of the 1970s. The 1990s' shortage may be aggravated by the fact that increased economic opportunities for women and members of minority groups have encouraged many not to consider teaching careers.

A teacher shortage will face the nation and the state for many years to come. "Simply because of impending retirements, many school districts face a situation in which half of their teachers may have to be replaced in the next three or four years."[14] According to the Carnegie Forum on Education and the Economy, the nation "can anticipate a steep increase in the annual rate at which new teachers must be hired: from 115,000 new teachers in 1981 to 215,000 in 1992, by conservative estimates. Between 1986 and 1992, 1.3 million new teachers will be hired."[15]

Since teachers occupy a pivotal role in the educational system, the quality of teachers who are attracted to California schools will largely determine the quality of the state's school system. Relatively few college students today plan a Kindergarten-12th grade teaching career.

According to some national surveys, the percentage of college students planning K-12 teaching careers dropped from 22 percent in 1972 to about 3 percent in the mid-1980s.[16] In order to attract better teachers, improvements may be needed concerning teacher salaries, their status within the educational system, and in teacher education.[17] It will be particularly important to attract and retain high-quality teachers from minority groups, not only because of their ability to understand and teach minority students, but also to serve as positive role models for those students.

Bilingual instructors will be in particular demand given the increasing diversity of the student population. Today over one million California students have a primary language other than English, and 500,000 are enrolled in bilingual education classes. However, over 80 percent of all certified employees of the school system are Anglo, although the proportion who are members of minority groups is increasing. In the 1984-85 school year, California employed 7,891 certified bilingual teachers and another 4,792 who were granted waivers. "The steadily increasing need continues to outstrip the state's production of certified bilingual teachers; consequently, districts remain obliged to hire teachers who hold waivers."[18]

Fourth, perhaps the most difficult challenge facing California's education system will be the cultural adaptation process by which immigrants become equipped with the skills needed to prepare them to compete on an equal basis with their fellow residents. These needed skills include literacy and language.

The national debate over the alleged illiteracy of one-third of all Americans has focused attention on literacy and whether it is taught in school curricula. Literacy is a subject of much debate but little consensus: most people define literacy to include the ability to read and write; some go further, defining literacy as basic communication skills and familiarity with shared cultural information. This debate between an emphasis on generic skills versus culture has spawned proposals for various kinds of curricula: those based on "great books," a national core curriculum, and even lists of what "literate Americans" should know.[19]

California and other states have been debating the best means to educate limited-English-proficiency (LEP) students. Some educators and parents prefer an English-immersion approach; others want children taught in their native languages and gradually brought into English-only classes. California has tried to satisfy both sides in this debate: its impacted-language program permits local school districts to use English-only instruction when there are insufficient teachers and materials, but California also has a program of incentives to encourage teachers to become bilingual teachers or language development specialists.

The debate over the language of instruction in schools mirrors the debate over the role of English in U.S. society. Many Californians believe that English is the common glue which binds society; witness the 2-to-1 vote for Proposition 63 making English the official language of

California in November 1986. However, it is incontrovertible that California has been enriched by the languages and cultures of immigrants to the state.

Perhaps the best solution to the contentious language issue is a society which permits immigrant languages and cultures to survive and flourish but also encourages newcomers to master the English necessary for economic success. Indeed, sociolinguist Joshua Fishman has recently described a specific form of societal bilingualism known as "diglossia" which permits the minority language to be maintained in the family and, if desired, in local government and business. However, education (especially beyond the primary level), central government, and state and national business are associated with the majority language. "If such arrangements continue for at least three generations, we may say that both bilingualism, at the individual level, and diglossia, at the societal and governmental levels, obtain."[20]

The adaptation process will require cooperation from both the residents and the immigrants. All Californians must ensure that newcomers are adequately equipped to communicate and compete with fellow residents. Immigrants must be willing to learn the language and culture of the host society and to become "Americanized" without losing their original identity. The very nature of 21st century California will depend on the successes or failures of educators as they seek to acculturate young newcomers into the state's mainstream.

The Cost of Educational Excellence

Education is the single most costly program financed by the California state government: K-12 education accounted for $11.1 billion or some 40 percent of state expenditures in the 1985-86 school year. Education is costly, dispersed throughout the state, and a major governmental responsibility, so it is the subject of annual legislative debates over educational funding and priorities.

The funding of California education was changed dramatically in 1978 by Proposition 13, which reduced the property taxes that local government had used to finance education. The state government doubled its commitment to K-12 education in one year: in 1977-78, local government provided 55 percent and state government 30 percent of K-12 funds (the federal government and other sources provided the remainder). In 1978-79, the local government share was 27 percent and the state share was 56 percent.

Proposition 13 accelerated California's decline in educational funding relative to other states. In the early 1960s, California ranked sixth in expenditures per K-12 pupil. In 1978, when Proposition 13 was enacted, California ranked 22nd among states. During the 1981-82 recession, California slipped to 41st among states before educational reforms and funding increases in 1983 jumped California to 26th place in 1985-86.

Volatility has been the hallmark of educational funding in California, making effective

planning difficult. As a result, California has slipped in the summary indicators used to compare public school systems among various states. For example, California's average 24 students per teacher was 50 percent larger than New York's 16 students per teacher in 1984, while California's expenditures per pupil in average daily attendance were 40 percent lower than New York's. Such statistics explain why New York ranked third in the National Education Association's state rankings for 1983-84 and California 31st.

Dissatisfaction with California's K-12 public educational system led to reforms in 1983. These educational reforms, under the Hughes-Hart School Reform Act (SB 813), provided $900 million in additional funds on an incentive basis to school districts which implemented curricular and personnel policy changes. The major curricular changes were longer school days and school years, a 10th-grade counseling program, and stiffer high school graduation requirements that prompted the development of new courses, especially in the sciences. The major personnel policy changes were higher minimum salaries for beginning teachers ($20,200 in 1985-86), a mentor teacher program, and improved teacher training and evaluation.

The implicit promise of SB 813 was that additional state funding would be forthcoming if local districts adopted these reforms and the reforms bolstered student achievement. A series of 28 quality-of-education measures were developed, and statewide targets for each indicator were established. Evaluations of SB 813's educational reforms in 1986 were laudatory; one commentator concluded that "the results so far have been impressive -- 23 of the indicators have shown increases over the past two years and 13 were above 1986 targets."[21] The college entrance exam scores of California students have risen and average teacher salaries have jumped to 6th in the United States, but California remains the state with one of the highest average student-teacher ratios.

The legislative debate on the 1987-88 education budget tested the state government's willingness to continue to increase funding for schools. The Governor requested a smaller increase for K-12 education than the (elected) Superintendent of Education believed necessary for continued improvement, and there ensued a public debate over the impact of additional state funds on the quality of public education. The debate included a march organized by a coalition of minority student activists protesting tightened budgets and stiffer academic requirements -- policies that some believe would push the rungs of the education ladder too far apart for members of minority groups to ever climb up the ladder of economic success.

The Governor's proposal would have reduced real or inflation-adjusted expenditures per pupil by about 1 percent to avoid a tax increase and build a budget reserve. The Governor and his allies noted that California spends $100,000 each year to educate a class of 30 students; that there are too many expensive special supplemental programs; and that the educational bureaucracy consumes too much of the education budget. The Superintendent of Education and

his allies countered that California spends less to educate larger classes than do other states and that a diverse student population requires specialized programs such as bilingual education.

Bilingual education was a special topic during the debate on the 1987-88 education budget because California in November 1986 enacted an "English-only" initiative, Proposition 63. Since 1972, California has required school districts to provide bilingual education programs for children whose first language is not English. About 500,000 students are enrolled in bilingual programs, but only 100,000 are in day-long bilingual classes -- the rest receive 30 minutes a day of special academic instruction in their native languages. The average student enrolled in a bilingual program remains in it for six years, and much of the legislative debate in 1987 over extending the state's bilingual program focused on whether school districts should be required to provide bilingual education. The leading legislative supporter of Proposition 63 proposed that school districts merely be authorized to provide bilingual education rather than be required to provide it. This proposal, as well as a proposal to require a school to make instruction available entirely in English to the children of any parents who request it, was defeated in the Assembly because legislators feared that introducing "flexibility" into programs of bilingual classes could encourage some school districts to drop all such classes.

The debate over bilingual education may presage a debate over school funding that has ethnic overtones. Political columnist Dan Walters notes that at current voting rates Anglos will remain a majority of all voters long after Anglos are no longer a majority of students. Walters notes that this difference between student and voter ethnic groups may generate a political debate over spending priorities: "Will an aging, but politically dominant Anglo population block that has relatively few children in school be willing to invest the billions in public education that will soon serve a mostly non-Anglo majority, or will spending limits and tax lids remain higher priorities?" [22] The 1987-88 debate over additional funds for public education may be a harbinger of future debates over spending priorities in an aging and more diverse California.

The debate over bilingual education also obscured the serious long-term funding needs of California's educational system. Proposition 13 ended the ability of most local school districts to issue bonds in order to build or refurbish schools. Each new classroom seat costs an average $10,000, so an expected enrollment growth of 100,000 students requires an annual capital outlay of $1 billion. In addition, it is estimated that half of all school buildings are over 30 years old and need refurbishing. To meet these capital costs, California would have to spend an additional $1 billion per year on education.

In addition to capital improvements, continuing education reform would require additional funds. Increasing expenditures per pupil adds directly to outlays; in 1985-86, the state spent $11 billion on K-12 education, so a 10 percent increase would add over $1 billion to expenditures. Other proposed reforms are also costly: for example, reducing the average class size by one

student costs about $160 million. Programs that actually reduce the high school dropout rate would increase outlays: each high school dropout who stays in school increases expenditures by $2,500; so if 100,000 dropouts stayed in school, an additional $250 million would be needed for education.

How could California raise additional funds for K-12 education? A serious problem facing California state government is Proposition 4, a 1970s initiative that does not permit state expenditures to rise faster than population growth and inflation. This initiative was not binding in the inflationary 1970s, but the prolonged period of low inflation in the 1980s is forcing the state government to make painful choices between additional expenditures for education, social services, and transportation. Local governments must have the approval of two-thirds of the voters in order to levy new taxes to support education.[23]

If the state government wants to increase educational outlays, and if Proposition 4 limits can be overcome, additional funds could come from a sales tax increase (each cent raises about $2 billion); a revision of the property tax because of the inequities caused by the date a person moved; and local matching of additional state funds.[24] The California Lottery does not generate a great deal of money for education -- less than $100 per pupil per year.

The cost of educational excellence in California is high and increasing. Californians made a major commitment to increased funding and educational reforms in 1983; four years later, this commitment to continued improvements in education appears to be wavering. However, California's ability to compete with other states and nations as its population grows and changes requires more -- not less -- of a commitment to educational excellence.

Notes

1. Policy Analysis for California Education (PACE), *Conditions of Education in California, 1986-87.* (Berkeley, CA: PACE Policy Paper PP86-10-5, October 1986).

2. Reich, Robert B., *The Next American Frontier.* (New York: Times Books, 1983) p. 143.

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11. California Assessment Program, *Survey of Academic Skills: Grade 8 - 1985.* Subgroup Result Table E, Ethnic Background. p. 12.

12. *Conditions..., op cit.,* pp. 7lff.

13. Hughes, Kate, "Do Stiffer State College Requirements Peril Higher Education?" *Sacramento Bee,* April 29, 1987, p. B11.

14. Carnegie Forum on Education and the Economy, Task Force on Teaching as a Profession, *A Nation Prepared: Teachers for the 21st Century.* May 1986, p. 10.

15. *ibid.* p. 11.

16. Hayden, Tom, "A Disquieting Survey of Recent Berkeley Graduates," *Sacramento Bee,* February 25, 1987, p. B9.

17. Harvard President Professor Derek Bok recently criticized schools of education for not having the core of knowledge needed to build a stable curriculum and attract outstanding students and faculty. Despite advances in cognitive psychology that should help researchers to understand how people learn, Bok criticized education for its "transitory fads and theories such as the open classroom, the child-centered school, and the 'new' math." *Chronicle of Higher Education,* April 22, 1987, p. 2.

18. *Conditions..., op cit.,* p. 91.

19. See the list prepared by E. D. Hirsch Jr. in his *Cultural Literacy: What Every American Needs to Know.* (Boston: Houghton Mifflin, 1987).

20. Fishman, Joshua, "Bilingualism and Separatism," *Annals,* September 1986, p. 171.

21. Odden, Allen, "Elementary and Secondary Education," in J. Kirlin and D. Winkler (eds.), *California Policy Choices.* (Los Angeles, CA: University of Southern California, 1986) p. 121.

22. Walters, Dan, "A Difference of 12 Years," *Sacramento Bee,* April 26, 1987, p. A3.

23. Proposition 13 requires a two-thirds vote to raise local property taxes for funding education and other social services. As local school boards face more severe overcrowding, many local districts are trying to win voter approval for bonds that will be repaid with special property assessments. However, many districts are adjusting property taxes in order to secure the needed two-thirds vote by, e.g., establishing a much lower assessment for persons over age 65 who are not likely to have children in school, and charging two or three times more for new homes than for existing homes. Such funding strategies produce side-by-side homes with property tax bills that differ by 80 or 90 percent.

24. Proposition 13 prohibits property tax increases unless a property is sold. Local property taxes are about 1 percent of assessed value, so people living in similar houses pay different property taxes based on when the house was last sold (assessed). As housing prices rise, this inequity increases.

Chapter 5
Education and The Work Force

The 1990s promise to be a decade of change: change in California's population, work force, and economy. As the population grows, ages, and changes in ethnic composition, the demands made on and by the work force will be altered. Most new workers will be women, members of minority groups, and immigrants, and the international economy will demand that they be facile with new technologies and skills in order to maintain California's competitive position and increase the standard of living. Many of the changes that are required to adapt the new work force to California's evolving economy must occur in the schools which train tomorrow's workers.

Economists emphasize that the interaction of the supply and characteristics of new workers and the future demand for goods and services will shape the future economy. Thus, an economy experiencing slower labor force growth should bid up the wages of entry-level teenagers, raising the prices in fast-food places and slowing their expansion.[1] However, most policy discussions of the future work force and jobs first estimate how many new workers will enter the labor force annually -- our projections see the California work force increasing by three million in the 1990s, or about 300,000 annually -- and then they ask where the new jobs will come from and what wages they will pay.

Many policy discussions which link education and the economy predict the type of economy which will employ new workers. Except for a near-universal agreement that most new jobs will be in small enterprises that provide services, there is little agreement on the shape of the future economy. Indeed, many proposals for industrial, "competitiveness," and trade policies are attempts to shape the future economy and thus the number and type of jobs available in the 1990s. Most of these policy proposals affect manufacturing, which employs about 15 percent of the work force in California.

Few people realize just how quickly the work force is changing, so the following section describes the evolving work force. Next, the role of schools in bridging the transition from dependent children to independent young adults is examined; this is the critical transition that schools must make to ensure that first- and second-generation immigrants become productive Californians. Finally, the schooling challenges that arise from work force changes and transition responsibilities are explored.

The Future Work Force

The work force produces the goods and services that generate private and public wealth.

In labor statistics, the work force is all persons age 16 to 64 who are employed or looking for work. Working is "voluntary," but most people who are not in school, disabled, or caring for small children are either employed or looking for work; in 1986, the national labor force participation rate, or the proportion of the population 16 to 64 that was employed or looking for work, was 65 percent.

The American work force has undergone several dramatic changes in this century. First was the reduction in the amount of work done by the men who then comprised the majority of the work force: hours of work were reduced, retirement came earlier with pensions and longer lives, and entry into the work force was delayed by further education. The second major change was the rise in the percentage share of working women: the proportion of women in the work force jumped from 33 percent in 1950 to 55 percent today. Women formed about one-fourth of the U.S. work force in 1950; today they constitute almost half. The third major work force change is the transition of the economy and labor market that is still under way. Instead of producing goods, most American workers will continue to provide services, but in a much less stable and much more international economy. This means the end of a once-familiar pattern of sons following fathers to work in the same industry and for the same company for several generations.

Shorter work lives, working women, and frequent career disruptions have altered the labor market dramatically in less than a generation. Even more shifts are on the horizon, and these changes will have more impacts in California than elsewhere.

The major work force changes that are anticipated include a slowdown in U.S. work force growth; new workers who are primarily women, members of minority groups, and immigrants; and the ongoing "career disruptions" for workers caused by new technologies, trade patterns, and consumer preferences. These U.S. trends will not be distributed uniformly across the nation -- California's work force growth will not slow down as much; its new workers are even more likely to be drawn from "traditionally underutilized groups"; and California workers are at least as likely to experience three or four "careers" during their working lives as workers elsewhere.

The first major work force change is the slowdown in labor force growth: unlike the 1970s, when the U.S. adult population increased by an average three million annually and the work force grew by 2.4 million, during the 1990s the population is expected to increase by 1.4 million and the work force by 1.3 million annually.[2] Since the population and work force in the 1990s will be larger, 1990s growth represents much lower percentage increases; instead of the 2.5 percent increase of the 1970s, the work force in 2000 is expected to increase by only 1 percent per year.

Slower work force growth will be accompanied by a change in the characteristics of

TABLE 18

CALIFORNIA'S PROJECTED LABOR FORCE BY ETHNIC GROUP, 1980 TO 2030 (in thousands)

	1980	1990	2000	2010	2020	2030	Percentage Change 1980-2030	Percentage Change 1990-2030
Anglo	8,198	8,936	9,445	9,492	8,971	8,499		
%	70	62	55	48	43	38	4	-5
Hispanic	2,026	3,089	4,614	6,005	7,312	8,579		
%	17	22	27	31	35	38	323	178
Black	792	1,038	1,245	1,379	1,434	1,460		
%	7	7	7	7	7	7	84	41
Asian	784	1,256	1,945	2,656	3,245	3,840		
%	6	9	11	14	15	17	390	206
Total	11,800	14,319	17,249	19,532	20,962	22,378		
%	100	100	100	100	100	100	90	56

entry-level workers. Workers who have traditionally been among the last to be hired -- workers from traditionally underutilized groups -- will represent 80 percent of the net additions to the U.S. work force in the 1990s.

California's population and work force will also increase at a slower rate in the 1990s, but immigration will make the work force slowdown less pronounced. Immigrants tend to be younger than resident U.S. workers and more likely to enter the work force, and the larger-than-average first-generation immigrant families promise a surge of new workers. Unlike the baby boom and bust, which had similar impacts nationwide, the concentration of immigrants in a few states will tend to localize their work force impacts.

The 1980 California work force of 11.8 million was 70 percent Anglo, 17 percent Hispanic, 7 percent Black, and 6 percent Asian. By 1990, the state's work force is projected to increase to 14.3 million and to become 62 percent Anglo, 22 percent Hispanic, 7 percent Black, and 9 percent Asian. By 2000, the Anglo share of the labor force will fall, the Hispanic and Asian shares are projected to increase, and the Black share should remain constant. By 2010, the work force will have a "majority of ethnic minorities," and by 2030 Hispanic workers are projected to outnumber Anglo workers. The age-sex-ethnic group labor force participation rates for future years were derived from those prepared by the Bureau of Labor Statistics for the United States and from those prepared by the Southern California Association of Governments for Southern California and adjusted for the entire state.

California's work force will grow and change rapidly in the two generations between 1980 and 2030 (see Table 18). During these five decades, the work force will almost double in size and will change dramatically in ethnic composition. The Anglo share of the labor force will

drop from 70 to 38 percent, while the Hispanic share will jump from 17 to 38 percent. The Black share will remain at 7 percent, but the Asian share will almost triple to 17 percent.

Many of these ethnic labor force changes are under way in the 1980s. During the 1980s, the Anglo share of the California work force is dropping while the joint Hispanic and Asian share is rising. These changing ethnic labor force shares reflect the changing characteristics of entry-level workers: Hispanics and Asians are projected to be 31 percent of the total 1990 work force, but 35 percent of the work force age 16 to 24 (see Table 19). The Hispanic and Asian share of the entry-level work force will continue to increase, reaching 44 percent in 2000 and 51 percent in 2010. By contrast, the Anglo share of the entry-level work force will fall from two-thirds to about one-third between 1980 and 2030.

The new work force will work in an altered economic landscape. During the 1980s employment has continued to shift from manufacturing to services, the international economy has become more important to the health of the state's economy, and the average income of Californians has slipped in state-by-state rankings. The abrupt decline in blue-collar jobs with large manufacturing firms in the 1970s displaced millions of workers who had assumed that they would have lifetime employment at relatively high wages, repeating their fathers' experience. According to some predictions, blue-collar production workers, the backbone of trade unions in the 1950s, will be the same percentage of the work force in 20 years as farmers are today, about 3 percent.[3]

U.S. manufacturing employment will decline as firms shift production work to lower-cost facilities abroad. Unless industrial nations adopt protectionist policies, more and more production jobs will be shifted to nations such as Brazil, Korea, and Mexico, where wages are only 20 to 40 percent of U.S. levels. New technologies enable low-wage workers abroad to produce even sophisticated products for the U.S. market.

California and the United States now have service economies. In California, services such as hotels, finance, and health care account for almost 25 percent of total employment, with manufacturing at 18 percent, and government 16 percent. In recent years, the largest employment gains have occurred in finance, insurance, real estate services, other business services, and the retail trade. California remains the nation's most important manufacturing state, but most job growth is occurring in the service sector. The California trade and service sectors, for example, gained more jobs between 1986 and 1987 (226,000) than existed in March 1987 in auto manufacturing (209,000).

Many planners hope to establish California as a leading manufacturer of high-tech products in the fields of electronics, biotechnology, and other new specialties. California leads all other states as the place where the U.S. invents new high-tech products, but once such products are developed, production often shifts to lower-wage areas abroad. The high-tech

TABLE 19

PROJECTED LABOR FORCE BY AGE AND ETHNIC GROUP
1990 TO 2030

1990	Age 16-24	%	Age 25-44	%	Age 45-64	%	Age 65+	%	Total	%
Anglo	1,399,527	58	4,880,011	61	2,365,625	67	291,258	75	8,936,421	62
Black	166,517	7	614,767	8	234,535	7	20,412	5	1,036,231	7
Hispanic	639,348	27	1,801,383	23	608,141	17	40,122	10	3,088,995	22
Asian	190,001	8	694,896	9	337,137	10	34,033	9	1,256,067	9
Total	2,395,393	100	7,991,057	100	3,545,438	100	385,825	100	14,317,714	100
2000										
Anglo	1,417,319	49	4,370,407	53	3,289,253	60	368,705	65	9,445,684	55
Black	185,513	6	656,441	8	368,593	7	34,420	6	1,244,967	7
Hispanic	970,394	34	2,355,505	28	1,193,604	22	94,286	17	4,613,789	27
Asian	291,411	10	917,592	11	664,637	12	71,634	13	1,945,274	11
Total	2,864,637	100	8,299,945	100	5,516,087	100	569,045	100	17,249,714	100
2010										
Anglo	1,437,843	43	3,808,473	45	3,838,561	54	406,943	58	9,491,819	49
Black	210,743	6	625,358	7	497,726	7	45,198	6	1,379,025	7
Hispanic	1,240,985	38	2,776,040	33	1,847,903	26	139,669	20	6,004,598	31
Asian	416,020	13	1,186,171	14	949,707	13	103,913	15	2,655,811	14
Total	3,305,591	100	8,396,042	100	7,133,897	100	695,723	100	19,531,253	100
2020										
Anglo	1,254,750	38	3,837,359	40	3,330,070	47	548,891	55	8,971,070	43
Black	196,206	6	673,321	7	497,776	7	66,858	7	1,434,161	7
Hispanic	1,407,775	42	3,481,263	37	2,190,619	31	232,157	23	7,311,814	35
Asian	471,441	14	1,493,465	16	1,122,257	16	157,964	16	3,245,126	15
Total	3,330,173	100	9,485,408	100	7,140,722	100	1,005,870	100	20,962,171	100
2030										
Anglo	1,268,927	35	3,588,311	36	3,007,879	41	634,093	49	8,499,210	38
Black	203,581	6	677,883	7	488,537	7	90,210	7	1,460,212	7
Hispanic	1,593,328	44	4,045,649	40	2,591,897	35	347,942	27	8,578,815	38
Asian	556,568	15	1,753,754	17	1,319,357	18	210,120	16	3,839,799	17
Total	3,622,403	100	10,065,597	100	7,407,670	100	1,282,365	100	22,378,036	100

All figures have been rounded.

production which remains in the state does not generate traditional high-wage and unionized manufacturing jobs; instead, many of the high-tech manufacturing jobs are low-wage assembly line jobs filled by immigrant women.

The service economy which generates most new California jobs offers several distinct types of career opportunities. At the low-wage, low-skill end are jobs for janitors and maids that often generate poverty-level family incomes. At the high-wage, high-skill end of the job market are jobs for scientists and computer specialists who can prosper in an entrepreneurial and dynamic service economy. As manufacturing jobs disappear, many replacement service jobs are in the low-wage labor market tier, which helps to explain why average real incomes are falling. For example, average hourly earnings of U.S. auto workers in 1987 were $14, versus $6 in retail trade. Each lost auto job that is replaced by a retail trade job translates into a drop in weekly earnings from $584 to $172, reflecting the prevalence of part-time jobs in retailing.

The future labor market in the U.S. will be a much less stable world than in the past. Instead of joining one company for life, white-collar workers are likely to experience four or five career disruptions as technologies change, and international competition, deregulation, and business restructuring displace workers. Future employment expansions will be accompanied by changes in the nature and composition of jobs. The U.S. push for a "competitive" economy demands flexible workers -- workers who have mastered the fundamental skills of reasoning and communication and who are equipped to cope with job changes.

Career disruptions will affect all types of workers. New technologies, new products, and new services usually create more jobs in management and marketing, explaining the surge in finance, information, marketing and other business service jobs. However, the large and small companies that create these new jobs often expand and shrink, so that even many middle-class workers will probably become familiar with temporary employment agencies, portable pensions, and fringe benefits such as health insurance that continue after a job loss. Companies wanting flexible or temporary work forces account for the 800,000 "temps" hired daily; in 1986, about five million Americans did at least one day of work as a "temp."

The ever-changing future labor market may impose new demands on the educational system. Just as the influx of immigrants puts pressure on California schools to offer facilities and teachers for programs of English as a Second Language, so workers and businesses may look to the schools to help provide mid-career retraining for displaced blue- and white-collar workers.

A major concern for California in this future economy is the role of less skilled and vulnerable immigrants. These newcomers are likely to be drawn into those jobs and industries that are shifting overseas. Many of these lower-wage "immigrant jobs" in industries such as footwear and furniture do not offer the training necessary to move up the economic ladder if a

job disappears. Under such circumstances, immigrant workers are hurt twice; by not learning the English and job skills needed to advance in their first U.S. jobs, and then by competing with each other for a diminished pool of unskilled jobs as their entry-level industrial jobs disappear.

The potential problems of adult immigrant workers in the future economy mean that the schools must effectively train immigrant and minority children to avoid a two-tiered society stratified by ethnic group. Tomorrow's workers will be disproportionately drawn from groups that have not fared well in the school system or the labor market; yet they will provide most of the workers whose productivity and taxes support dependent Californians.

The Bridge Between School and Work

The American service economy requires different skills from workers than did the agricultural and industrial economies of the past. Instead of the agricultural and mechanical skills needed in the early 20th century, or the craft and assembly skills needed in the industrial economy of mid-century, the service economy requires analytical and communication skills. These "knowledge" skills mean that schools must teach more than reading and writing; literacy for good jobs in the service economy will involve mastery of basic reasoning and communicating skills so that workers are flexible enough to adapt to the constant change in the work place that is expected.

The service economy's skill requirements should inspire in schools a demand for excellence in knowledge skills so that tomorrow's workers have the needed flexibility to adjust to change. In part, the educational reform drives of the 1980s reflect a re-dedication of the schools to teaching fundamentals, adding new courses and strengthening courses in mathematics and the sciences, and doing more teaching each day and year.

Student demographics pose a considerable challenge for the schools. The proportion of students that schools have not been successfully educating is rising -- minority students, students who do not speak English at home, and students from poor families. By 1990, at least half of all California students will be from minority ethnic backgrounds, and continued immigration assures that the 25 percent of all students who do not speak English at home will not diminish. About 15 percent of the school-age children in California live in families with poverty-level incomes, and the rise of households with two working parents means that there are both poor and affluent "latchkey" children.[4]

California has dealt with these special student groups by establishing a number of specific assistance programs, such as the Economic Impact Aid program for schools in poorer areas, the State Compensatory Education program, the Limited English Proficiency (LEP) program, and the Bilingual Education program. Each categorical program generates a costly and much-criticized

bureaucracy, but there is strong legislative opposition to rolling these categorical programs into a "block grant" so that local school districts would establish their own priorities for special students. Legislators fear that "flexibility" could permit some school districts to abandon programs for students with special needs.

Language is perhaps the most controversial "special program" in the schools. California's teachers instruct 500,000 students in more than 100 different languages, although most non-English instruction is in Spanish. Most Californians recognize that an international economy oriented to the Pacific Rim requires workers and managers who can communicate with our trading partners, but there is considerable opposition to using public funds to maintain a student's original language at the expense of English.

The often heated rhetoric which surrounds the language issue in California schools can obscure the more important goal of making the schools an effective bridge between school and work for a very diverse group of students. Teachers, administrators, and legislators would better serve tomorrow's Californians by concentrating on improving their teaching of vital knowledge skills.

The Educational Challenge

Education is the single largest tax-funded program in California and in most other states. Californians have been willing to commit over half of all state funds to education because they recognize that today's students are tomorrow's workers, taxpayers, and leaders. Support for public education remains strong, but there is less agreement on exactly what the schools should be teaching to the ever more ethnically diverse students who will work in an ever-changing service economy.

California's K-12 educational system is failing the 100,000 students who drop out of high school each year, and is not preparing many of those who do graduate for the world of work. If the K-12 schools fail, then society pays several times for the education that was not received; for the remedial education needed to make young adults productive workers or effective students in institutions of higher education; and by collecting fewer taxes from workers whose incomes are lowered by an inadequate education.

Business may have the biggest stake in an education system that can educate tomorrow's workers effectively. U.S. business, which already spends $40 billion annually on training and retraining, will have to expand its educational efforts because of changes in the economy. If businesses must also provide remedial education for new workers, this training burden could become a major labor cost issue in the 1990s, much as health insurance became a major cost issue in the 1970s and 1980s.

The need to link the schools that train future workers to employers who will hire them is

a widely accepted concept, but specific proposals to establish such links are few. For example, in the early 1980s, the *Washington Post* called for a merger of the U.S. Departments of Education and Labor in order "to make sure that schools provide graduates with the education and skills needed in a rapidly changing economy."[5] The reason for establishing a formal linkage between school and work is that, even though unemployment rates fall with age, poor early experiences in the labor market usually lower lifetime earnings.

There are several strategies that business and government could adopt to help make schooling more effective in this regard. One model of business, government, and educational cooperation is the federal Job Training Partnership Act, which requires that potential employers help to oversee training programs for disadvantaged adults so that the training maximizes the probability of getting a job. Although there may be a tendency for such programs to "skim the cream" of the eligible population by selecting and training those persons most likely to find jobs, an employer's input into the training program has been heralded widely.

There are also other opportunities for cooperation. The Individual Retraining Accounts proposed by the Reagan administration and several Democratic presidential candidates would enable workers to deduct contributions into accounts that could be used for retraining when workers' careers are disrupted. Such a system would impose new responsibilities on schools since they would have to develop flexible programs for adult students anxious to re-enter the work force.

Such education reforms would require additional outlays for schooling. Californians approved a 1979 initiative that limited increases in state spending to changes in population, inflation, and income, and this spending limitation may change California from a high-tax, high-service state to a low-tax, low-service state. Such a transformation would be particularly unfortunate for the education system.

A dynamic population and economy demands a flexible school system. Schools face the challenge of educating a more diverse student body for an ever-changing economy. Meeting this challenge will require leadership and imagination.

Notes

1. Economists make such predictions *ceteris paribus*, or, "other things being equal." Two-earner families with little time and stable real incomes may still prefer eating out at fast-food restaurants and encourage their expansion despite prices.

2. Fullerton, Howard, "The Labor Force: BLS' Latest Projections," *Monthly Labor Review,* Vol. 108, No. 11, November 1985, pp. 17-25.

3. Drucker, Peter, "The Rise and Fall of the Blue-Collar Worker," *Wall Street Journal,* April 22, 1987, p. 36.

4. Many poor children live in families headed by women. This "feminization of poverty" is partially a result of the high rate of divorce: the average monthly child support payment collected by district attorney offices in California is $160, about the same as the U.S. poverty guideline. In 1986, delinquent child support payments totalled more than $1.25 billion in California.

5. Cited by Ray Rist, "Playing in the Margin: Education and Employment Training," *Society,* No. 19, September-October 1982, p. 115.

Chapter 6
Conclusions

California's population is growing and changing, presenting new challenges for the state's educational system. Schools play a central role in the California economy and society: they account for 55 percent of state expenditures; they educate tomorrow's workers; and they transmit the shared experiences that glue society together. Population growth and ethnic heterogeneity pose new challenges for California's schools. California can expect an additional 100,000 students per year in the coming decade, requiring new teachers and facilities. Most of these new students will be from minority groups; in the 1990s, a majority of all school-age children will be non-Anglo.

The education system has done a very uneven job in preparing students of various ethnic backgrounds to be productive citizens. Anglos have generally fared well, and Asians even better. However, Hispanics and Blacks have not been well served by the system; they suffer the highest dropout rates and the lowest enrollment rates in higher education. As the Hispanic proportion of the population rises, these educational indicators must improve to prevent the overall quality of the work force from declining.

California has a large and complex educational system. California's K-12 public schools enroll around 4.3 million students, and these students are taught by about 160,000 teachers representing one of the highest student-teacher ratios in the United States. Enrollment rates indicate that Anglos and Blacks have similar proportions of their 5- to 17-year old children in school, that the Asian enrollment rate is considerably above the Asian population share, and that the Hispanic enrollment rate is considerably below its population share.

These differences in enrollment rates have important implications for the educational system and the economy because the ethnic mix in California is changing. If the (conservative) demographic assumptions of this report prove to be correct, then in about 40 years California's students will be 40 percent Hispanic, 33 percent Anglo, 20 percent Asian, and 7 percent Black. Except for Blacks, these 2030 projections represent dramatic shifts in two generations: in 1980, students were 60 percent Anglo, 23 percent Hispanic, 9 percent Black, and 8 percent Asian.

The growth and diversity anticipated for California's schools pose qualitative and quantitative challenges. Qualitatively, schools must reduce high dropout rates, especially for Hispanics; continue to raise academic achievement levels; employ more teachers and more effective teachers; and continue to play a central role in the cultural adaptation of immigrants and residents. Quantitatively, California must be prepared to spend more than $100,000 annually to teach a class of 30 students. However, it may not be easy to find the additional funds to cover the extra expense associated with the special needs of California's changing students --

limitations on additional state and local spending and the changing priorities of voters may make it difficult to raise additional funds for schools.

All Californians have a stake in the effectiveness of our schools because schools train tomorrow's workers and leaders. California's future work force must acquire in the schools the knowledge skills needed to increase the standard of living in the world's fifth largest economy. The future work force mirrors the changing student body: over the next 15 years, almost all of the net additions to the work force will be women, members of minority groups, or immigrants -- persons who have often been ill-prepared by the schools.

Appendix

The Demographic Assumptions

For the past 13 years, fertility in the United States has been at historical lows. Women have been averaging 1.8 live births during their reproductive years, which is not sufficient to replace the population in the long run without immigration. California's fertility closely resembles that of the nation. Because of its large Hispanic population, some scholars set fertility at slightly higher than the national average. However, as separate projections are to be made for each ethnic group, this assumption, while probably valid, is not appropriate to this study.

Anglo fertility is assumed to be 1.7 live births per woman: Black fertility reflects that of all Blacks in the nation, 2.3 live births per woman. Estimating current Hispanic fertility is more difficult given the limited data from the National Center for Health Statistics (NCHS). According to the most recent statistics from NCHS on births of Hispanic parentage in 1982, "Mexican women and 'other Hispanic' women had the highest fertility rates [among Hispanics], 102.8 and 108.8 per 1,000 women 15-44 years of age, respectively."[1] This is approximately 62 percent higher than the overall rate for all women. Thus we assume that Hispanic fertility in 1980 was 3.0 live births per woman.

Similarly, data are rare on Asian fertility, particularly at the ethnic level. A recent analysis of the 1980 Census by Robert Gardner *et al.* yields interesting information on the larger Asian groups in the United States.[2] Japanese and Chinese fertility is somewhat below the national average, while that of Koreans and Indians approximates the national average. Filipino and Vietnamese fertility rates are higher. Fragmentary reports indicate that other Southeast Asians may have even higher fertility rates. We assume the 1980 fertility for these groups to be as follows: Chinese and Japanese 1.7; Indian 1.8; Korean 2.0; Filipino 2.5; Vietnamese and other Southeast Asians 3.0; and Other 3.0.

Fertility for all groups is assumed to converge at 1.8 by 2030. During the period of convergence, the average age of mothers at the birth of their children will also be gradually adjusted toward that reflected by lower rather than higher fertility. That is to say that the average age of the mother at birth of children will increase slightly as fertility falls. Furthermore, future immigrants will be assumed to have the same fertility as others from their native country already in California, at whatever future date they arrive.

Mortality patterns are easier to assess with some confidence. While we cannot be certain that fertility will not increase in the future, progress in extending life expectancy for all Americans is highly likely. For Anglos and Blacks, we assume that life expectancy will increase from that registered in 1980 for the total United States and will converge at 80 years of age

(for both sexes combined) by 2030. In 1980, Anglo life expectancy was 72 years, and Black life expectancy was 67. Hispanic life expectancy is assumed to increase from 70 years in 1980 to 80 by 2030. Among the Asian groups, Japanese and Chinese as well as Koreans and Indians will follow the same path as Anglos; the other Asian groups will more likely follow that of Hispanics. Differences are slight among the various groups being studied and convergence is assumed for 2030. Projections will be done separately for males and females. In any case, slight variations in life expectancy rates have little effect on the eventual size and distribution of a population.

Future migration, whether internal or international, is more difficult to estimate than either fertility or mortality. International movements are dependent on many imponderables, such as the economy and political stability of the sending countries as well as the economic and legislative mood of the United States. Future and as yet unpredictable political disturbances in Latin American or Asian countries could lead to massive refugee movements in the direction of the U.S. Pacific coast. On the other hand, new legislation could drastically curtail illegal movements and limit legal and refugee movements.

Interstate migration is almost totally dependent on economic conditions. Jobs attract people; unemployment sends people away from an area. Will continued high levels of migration mean fewer jobs for other Americans from other regions of the country? If so, will out-migration from California become the normal pattern? On the other hand, if immigration is substantially reduced at the same time that the state's economy improves, will that lead to significant increases in the number of Americans moving to California? We have seen that during the 1970s the better educated were more apt to move to California while those in other occupations requiring less education tended to move away from the state. Such a pattern may continue in future years.

The number of legal foreign entrants into California is dependent on the number entering the nation. Since 1980, that number has averaged about 600,000 annually, with some 27 percent settling in California. In addition, there are no reliable data bases available which could be used to make even informed estimates on the number of persons entering the country illegally in any given year and the number leaving the country, both legally and illegally.

A recent study has estimated the number of legal emigrants from the United States (thus not including the circular movement of illegal migrants) at about 100,000 per year.[3] Most of these people are Anglos returning to their country of origin. Estimates of the number of clandestine entries in any given year range from 100,000 to more than one million.

The Urban Institute has recently estimated that more than one million came to California illegally during the 1970s and that "for the state as a whole, almost 60 percent of the recent immigrants have come without proper documentation."[4] A new study by the National Academy

of Sciences estimates the number of illegal residents in the United States at between two and four million.[5] It is thought that a significant majority of illegal migrants are from either Mexico or Central America, with many making California their desired residence in the United States.

Given the unreliability of data on immigration patterns, no single assumption will satisfy all readers. We have a strong predilection for erring on the conservative side. We assume that 750,000 people immigrate annually to the United States, 600,000 legally and 150,000 illegally. If about 150,000 leave the country, legally and illegally, this means that net migration into the United States is 600,000 per year. That is our assumption. About 32 percent of all net migration, legal and illegal, 190,000 migrants, is assigned to California. (This is higher than noted above because the proportion of illegal immigrants coming to California is thought to be more than 35 percent, and a certain amount of secondary migration to California on the part of some refugees has been observed.) Based on recent patterns of immigration by population size, country of origin, age, and sex, as well as on intended place of residence of legal immigrants, the distribution of annual net immigration into California by ethnic group is:

Asians	75,000
Chinese	10,920
Filipinos	19,200
Indians	1,500
Japanese	2,160
Koreans	9,000
Laos/Kam.	7,620
Vietnamese	21,600
Other	3,000
Hispanics	100,000
Central America	35,000
Mexico	65,000
Anglo	10,000
Black	5,000

Interstate migration is also a factor when making projections for the state of California. During the 1960s and the early 1970s, net migration into California was considerable. Since 1970, however, such movements have fluctuated, and there have been years during which more people left than arrived. Again, to be deliberately conservative, net migration in future years is assumed to be zero. In other words, over the long run, as many U.S. residents will leave California as will enter the state, which has been the situation for about the last decade. With immigration remaining high, massive surges of in-migration from elsewhere in the country are unlikely.

Yet another special type of internal migration must be considered: secondary movements by refugees. Numerous groups of Southeast Asians, as well as other refugees, have been resettled in various areas of the nation. Hmongs, for example, are located in Minneapolis, Minnesota as well as in Providence, Rhode Island. Evidence suggests that, over time, many such refugees will relocate in California, joining others from their country of origin already in the

state.[6] These numbers are not inconsiderable. As noted above, our assumptions on international migration indirectly take into account such secondary moves on the part of refugees. Thus no further attempt to measure this phenomenon is undertaken.

Two or more sets of projections based on different assumptions for migration or fertility or mortality could have been constructed. Such an approach is often used and is generally commendable. Yet too many numbers can lead to confusion. If the reader is aware of the exact assumptions being used, he or she can then adjust the findings to fit whatever changes may take place in future years in the level of immigration, fertility, or mortality. Thus in this report only one set of assumptions is used.

These assumptions are admittedly conservative, whether in fertility, mortality, or migration. Fertility is assumed to decline among future immigrants; mortality levels will fall but not dramatically; migration, both international and internal, will not be as enormous as some predict. By taking this approach, the actual projections should be more acceptable and reasonable than they would be if higher fertility and migration assumptions were used.

Notes

1. National Center for Health Statistics, S. J. Ventura, "Births of Hispanic Parentage," 1981. *Monthly Vital Statistics Report,* July 1985.

2. Gardner, Robert W., Peter C. Smith and Herbert R. Barringer, "The Demography of Asian Americans: Growth, Change and Heterogeneity," paper presented at the Annual Meeting of the Population Association of America, Boston, MA, April 1985.

3. Warren, Robert and Ellen Percy Kraly, "The Elusive Exodus: Emigration from the United States." (Washington, DC: Population Reference Bureau, Inc., Population Trends and Public Policy papers, No. 8, March 1984).

4. Muller, Thomas, *The Fourth Wave: California's Newest Immigrants (A Summary).* (Washington, DC: Urban Institute Press, 1984) p. 6.

5. Levine, Daniel B., Kenneth Hill and Robert Warren (eds.), *Immigration Statistics: A Story of Neglect.* (Washington, DC: National Academy Press, 1985).

6. Population Research Unit, *Estimates of the Southeast Asian Refugee Population in California Counties and the State: July 1, 1983, Report SR-84-1* (Sacramento, CA: California State Department of Finance, February 1984).